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THE

PETROLEUM AGE.

VOL. I.

November, 1881, to December, 1882.

BRADFORD, PA.

THE PETROLEUM AGE PUBLISHING COMPANY, PUBLISHERS.

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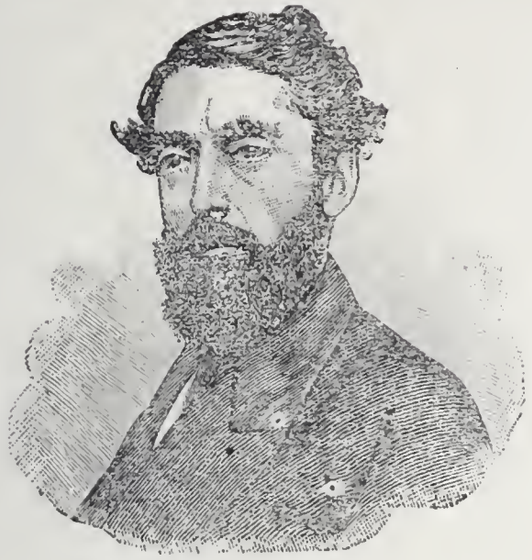

COLONEL EDWIN L. DRAKE.

THE FIRST SUCCESSFUL OIL PRODUCER—PORTRAIT, WITH SKETCH OF HIS LIFE AND STRUGGLES.

WITHIN a comparatively short time the great petroleum industry of this country has assumed such vast proportions, and has added so much to its wealth, that a history of the struggles of the first successful oil producer will always be a matter of absorbing interest. Men are always found in every country ready to appropriate the honors that justly belong to others. Columbus was robbed of his just reward, of discovering America, for a time; and the attempt to rob Shakespeare of his well earned honors in the literary world, was not too base an act for men in our own time. Now that Colonel E. L. Drake, the first successful producer of petroleum, is dead, there are persons so lost to all sense of justice as to make the attempt to rob his memory of the justly earned fame. Their efforts will be without success, as their cause is most unworthy. It was by the merest accident that Col. Drake's attention was first directed to the value of petroleum in 1858. Jonathan Watson, in company with Dr. F. B. Brewer, now of Westfield, N. Y., and others, were interested in lumbering. They owned a large tract of land on Oil Creek, on which an oil spring was located. They often noticed the oil flowing and running to waste on the surface of the water. There was a general impression among the lumber men that the oil was of the same nature as the "Senaka Oil," which had long before been gathered by the Indians and sold as a medicine. Old Nat Carey, a local character, had made considerable money (years before Jonathan Watson had settled in the neighborhood) by selling the oil as a cure for rheumatism and other ills. All this was made known to Mr. Watson, who was much interested in the spring, and imagined that he had a treasure that would some day be a source of income. To ascertain its true value, Mr. Watson took a bottle of the oil with him when in 1854 he made a visit to Hartford, Conn., his old home. Among others to whom he showed the oil was a celebrated chemist, Professor Bull, who had been Mr. Watson's Sunday School Superintendent many years before. The Professor made a careful analysis, and pronounced the oil as being valuable for medicinal purposes as well as for its illuminating qualities. "It is a compound, however, and not a natural product, as you suppose," said the Professor. Mr. Watson replied that he had himself taken that oil from the spring, and described the manner in which he did it. It was all to no purpose; the Professor would not be convinced, and replied: "Mr. Watson, I know you are honest in your statement, but I think some one, for some purpose, has been playing a practical joke on you; for I have too much confidence in my profession and what it has taught me, to doubt for one moment the conclusion I have reached in making this analysis." Seeing it was no use to argue the question further with him, the bottle of crude oil was taken to other places, but Mr. Watson was careful not to mention the rebuff he had received from the learned Professor. Messrs. Eveleth & Bissell, a firm doing business in Hartford and New York City, had been receiving about a gallon of this oil a day, which, mixed with other ingredients, they sold as the celebrated "Mustang Liniment." They had been receiving the oil for four years or more when Mr. Watson made a second visit to Hartford, Conn.

Col. Drake was at this time a conductor on the New York & New Haven Railroad. His shrewdness had often attracted the attention of Messrs. Eveleth & Bissell, and it was concluded to send him out to Western Pennsylvania to look after the oil interests of the firm, if suitable arrangements could be made with Col. Drake. After settling the basis of compensation, the Colonel proceeded to Titusville.

When he had had time to carefully look the ground over and make his calculations in his own shrewd Yankee way, and after transacting other business, he returned to New York and made a report. His convictions were that the oil was very valuable, that it was under the surface in large quanties, and that the way to reach it was to drill a well. The firm heard his report and concluded to send him again to the West, as it was then called, and gave him $1,200 to put the well down with. A suitable derrick had to be studied out, tools had to be invented, changed and perfected, and the $1,200 was gone before the well was begun.

Col. Drake having kept his employers informed of the progress made and the exhaustion of his funds, one of the company came out, and having satisfied himself that the money was judiciously expended, considering the many embarrassments and difficulties that had to be surmounted, promised to send the Colonel some money on his return home. The company kept their word, and $1,200 more was sent. This last installment, after a few months, was exhausted, and yet the well was not down more than thirty or forty feet. The whole idea was considered so supremely ridiculous that it was with the greatest difficulty he could get assistance to prosecute the work. In July, 1859, he secured the services of an old salt borer named William A. Smith, and his two sons, without whose aid probably the well would have been abandoned.

Long and vexatious delays followed in prosecuting the work, the hole filling with water and the earth caving in. In this extremity the ingenuity of Drake came useful, and he procured an iron tube sufficient to reach the rock, thus shutting off the water and preventing any further caving in. Had Drake thought of patenting this mode of casing wells he could have made a fortune surpassing the profits of the Roberts Torpedo Company. The pipe was driven thirty-six feet before the rock was reached.

They kept on at work notwithstanding the fact that the money was exhausted, that is, the $2,400 raised by the Seneca Oil Company, for by such name was the company known, although Messrs. Eveleth & Bissell were the principal stockholders. Still they kept at work, aided by Dr. Brewer, Mr. Watson, Mr. Fleming and others. This aid was not in the shape of charity but a loan, for Col. Drake was a man of pluck and fine sensibilities, and would not accept charity from any one. The three men quit working August 29th at sundown, the system of working night turns being the creation of a later day.

The next morning the elder Smith was first at the well and to his astonishment and great joy discovered that the well was nearly full of oil. He procured a piece of tin spouting, plugged one end of it, dropped it in the hole, and soon filled a barrel with oil. The pump was put in and the well yielded at the rate of twenty barrels a day. It was by this achievement that the discovery of large bodies of oil was made and the practicability of reaching it by the drill established. This was the first oil well, and through it the name of Col. Drake became imperishable. The news of Col. Drake's sanity and success ran like wild fire up and down Oil Creek Valley.

The great discovery was flashed over the lightning's wings, and then began the memorable excitement which made princes and beggars before it subsided.

Col. Drake drilled a second well, but it yielded little oil. The Seneca Oil Company closed out its business and Col. Drake operated individually until 1864. In 1860 he was elected a Justice of the Peace of Titusville. At that time men were leasing, buying and exchanging lands in mad haste, and the acknowledgment and drawing up of contracts made the receipts of the office about $3,000. Other business, such as buying oil for a New York firm, made his yearly income about $5,000. A purchase of twenty-five acres of land from Jonathan Watson was considered a good investment, as it was afterwards laid out into town lots. Drake street now runs through the center of this tract. In 1863 Drake sold the land back to Jonathan Watson for $12,000. The same tract was afterward sold for $90,000. It is to-day worth five times that amount. Col. Drake disposed of all of his property in 1864, and left the Oil Regions forever. He took with him in all about $16,000 and went to New York, uniting himself with a Wall street broker. It was a bad move for one so inexperienced in the jugglery of manipulating stocks, and his cash did not last long. The constant reverses of fortune, together with the encroachments of disease, left him in 1865 an invalid, with threatened paralysis of the lower limbs. The family bought a cheap abode in Vermont, and lived on a small amount saved by Mrs. Drake, who had the true womanly instincts and was one of the noblest of her sex. By request of Drake's physician that he seek the sea air, the family accepted

the generous offer of a friend of the use of a cottage on the Highlands of Neversink, near Long Branch. Finding the wolf at the door, Mrs. Drake with a helpless husband and four little children to be cared for, attempted to earn them bread by sewing. It was an unequal struggle for the noble woman, and she must have failed entirely and the family reduced to beggary but for the accidental discovery of their circumstances by a citizen of Titusville, while on a visit to New York. When he returned to Titusville he made known to the good people the impoverished condition of Col. Drake and his family, and appealed for a subscription in their behalf. True to their well-known characteristics of unexampled generosity the sum of $4,200 was raised. The money was sent to Mrs. Drake, who on the advice of a physician removed her invalid husband and children to Bethlehem, Pa. Oil men had frequently visited Col. Drake at Bethlehem, and left a substantial token of their regard which was never heralded to the world.

He was a gentleman of refinement and fine qualities of head and heart. Many gentlemen now living in this city were well acquainted with him and speak in the highest terms of his personal character. Some years ago an effort was made to have Congress grant him a pension of $40,000, but the project was defeated, mainly by the efforts of a man for whom Col. Drake had done many favors.

The benefit of this discovery to the human race is incalculable. More than 20,000 wells are now producing an article which adds to the comfort and happiness of the world. A net work of more than 13,000 miles of pipe transports the oil to the different depots for refining and shipping. The sails of our petroleum-laden vessels decorate and whiten every sea. To the tourist in distant lands our petroleum packages and barrels are as familiar as they are to us. Beginning fn 1862 with a shipment of 14,000 barrels to Germany, which was sold for $2,000 less than the cost of tonnage across the sea, it has steadily risen until it now occupies the second position in our list of exports cotton alone exceeding it. More than 100,000 people are constantly engaged in producing and handling it in various ways, and this great industry, together with the wealth and present prosperity of the country, are indebted strictly to Col. Drake for his courage, sagacity and perseverance in first producing this great staple and important article of commerce.

Around his memory, therefore, shall ever entwine the richest gems of admiration and respect that his successors in the world of petroleum can offer. He has gone to rest, but his life and deeds are not among that class which sinks to eternal quietude. Dead! No; Col. Drake still lives. Wherever waves the banner of the illuminant we furnish an otherwise darkened world, shall be read in letters of light the name of the founder of the second greatest industry of the American continent.

THE "AGE."

ITS AIM AND OBJECT.

THE oil industry of America is the only one up to the present time that has not been properly represented by a journal wholly devoted to its interests. Realizing this fact, the publishers of THE AGE have undertaken the task of supplying the important need. How well they are to succeed is as yet quite a matter of speculation, though it must be confessed they have met with the most flattering encouragement on all sides. While they cannot boast that the first number is up to the standard of excellence designed, yet it contains matters of interest to everybody engaged in the oil trade, whether producer, shipper, refiner or dealer. It will be the aim of this journal to furnish a concise statement, from month to month, of all the facts and deductions obtainable regarding petroleum developments, not only in the region of supply and depots of delivery in America, but also in all parts of the world. It is true the obstacles to be overcome in order to bring THE AGE up to the ideal of the publishers will be numerous, and of some magnitude, but they have been properly considered, and no effort that energy and perseverance afford will be spared to accomplish the object intended. And as "great oaks from little acorns grow," the publishers are encouraged to proceed until the full measure of their hopes and anticipations shall have been realized. Promises do not make a readable or interesting journal, and therefore the columns of THE AGE will alone speak for it as it comes to its patrons while the months roll along. One promise, however, is hereby ventured before closing this greeting: THE AGE will contain the very latest news up to the hour of going to press. The regular monthly statement of oil operations, in a condensed form and up to the hour of issue, will appear, together with all other facts of importance relating to this great and growing industry.

PETROLEUM.

FEW persons, even of those who take a lively and active interest in the development and production of petroleum, are familiar with its early history or origin. It is commonly termed kerosene, and it is thought by many that this title had its origin in the discovery of petroleum in Northwestern Pennsylvania. But this is an error. The term is as old as the Greek language and is taken from a Greek word signifying wax, and was first employed as a trade mark for a composition of Hydrocarbons which were used for illuminating purposes. Kerosene was first extracted from the cannel coals of England, as the first announcement we find of this character is recorded in the specification of a patent granted in England in 1694, to three gentlemen named respectively Martin Ele, Thomas Hancock and William Portlock for "a way to extract and make great quantities of pitch tar and oyle out of a sort of stone, of which there is sufficient found within our dominions of England and Wales."

It was afterwards made from the bog head shales of Scotland, the albertile of New Brunswick, the asphaltum of Trinidad and from common rosin, and it has also been manufactured from the malthas of lower California. In 1846 Abram Gesner extracted oil from coal in Prince Edward's Island, and was the first man to stamp it "kerosene" in this country.

In England, soon after this, James Young, a Scotchman, established oil works. In 1847, it is said, his attention was directed to the extraction of a species of petroleum oil that exuded from a coal mine in Derbyshire, and after exhausting this supply he applied his energy to "smelting" the bog head cannel, which contained a large proportion of bitumen. In this business he was very successful, realizing on gross sales $100,000 per annum. Such success soon led others to the establishment of coal oil works all over the United Kingdom. The first manufactory of the kind in this country was the establishment of the kerosene oil works on Long Island, N. Y., in 1854. Thus we have the history (briefly) of the term kerosene and its application to the natural product of the rock.

"Petroleum" is the pituman species of oil, being the natural product of the rocks, principally sand stones, and its origin and use date back to many centuries before the Christian era. It was known to the early Roman writers under the title bitumen, or pituman, a term derived from a Greek word signifying pitch. In the Latin tongue the signification was drawn from *petro*, a rock, and *oleum*, oil—rock oil. This is quite familiar, and very much resembles our English word, petroleum. A recent writer states pitumen was first discovered in Zante, one of the Ionian Islands in the Grecian Archipelago, where the liquid oozed from the rocks and appeared on the surface of the waters and gushed from springs for several thousand years. It is more than probable, however, that the mineral pitch mentioned in ancient history and denominated "Jew's oil," was nothing more or less than a species of petroleum. It existed in great pits in Arabia and Arabia Petrea, south of Palestine, and in large quantities, and was used in the crude state for illuminating and heating purposes as far back as authentic history dates. There were then, as now, several species of the product, from the light limpid naphtha to the more substantial and solidified asphaltum. The latter was the most abundant in the region just named, and is yet found in all volcanic countries of the Eastern Hemisphere in greater or less quantity. Naphtha is the most volatile ingredient of the substance, and it is owing to the supremacy of this agency in the ordinary refined petroleum that explosions occur—it being a combination of carbon and hydrogen exclusively. Asphaltum is solid and brittle, though subject to liquidation by heat. It should be understood that petroleum is widely distributed, though there are but few localities that have become especially celebrated for its production. It is found in the north of Italy, and has been used for a quarter of a century in illuminating the cities of Parma and Genoa. Here the quantity is supposed to be exceedingly limited, however. It is found near Hanover, Germany, but also in moderate or exceedingly limited degree, and is an inferior grade. At Baku, on the Caspian Sea, near the southern limit of the Caucassian range of mountains, in Russia, the largest supply of the Eastern World is obtained. A range of country twenty-five miles in length, and from a half to one mile in width, has been celebrated for ages for the quantities of gases and oily liquids that have arisen to the surface from the bowels of the earth. The oil is collected in large open wells from ten to thirty feet in depth. It is of the heavier species of petroleum, however, and proceeds from the volcanic rocks that exist in that region. The product is transported by boats or barges to various points along the Caspian borders, and thence to the interior by the

ordinary mode of conveyance of the country.

Oil is also found in considerable quantities in Rangoon, India, by which a large share of the population of the Burman Empire is supplied. In 1875 there were 300 wells producing, there yielding nearly 100,000 barrels per annum. This product is superior to that of Russia, and is found at a depth of from fifty to seventy-five feet in a sandy clay, which overlies sandstones and argillaceous slates. It is also found in the Island of Trinidad, the Province of Ontario; the States of Ohio, West Virginia, California, Colorado, Kentucky and Tennessee, and also in South America. In all of these named, however, the supply is quite limited, and in most cases of an inferior grade, as regards illuminating qualifications. The fact of the existence of oil in Pennsylvania and New York, and especially along the Allegheny river and its tributaries, was known to the earliest settlers of the country.

The Indians gathered it along the shores of Seneca Lake, and it was sold as medicine under the title of "Seneca Oil." Oil Creek was so named because of the appearance of the liquid oozing from the surface of the earth and from the rocks along its shores. It floated down the creek over the surface of the waters, and was gathered by the Indians. Their method of harvesting the product was the simplest on record, while it was also, in a measure, ingenious. They formed small eddies by digging away the banks and by falling timber into the creek. In these eddies or *ports* large woolen blankets were placed on the water and permitted to float until they became thoroughly saturated with the oil, when they were removed, wrung out and replaced as before. By this means many barrels of the liquid were annually removed, bottled and sold as medicine. It is also stated that it was used by the red men in the celebration of their religious rites. After gathering a sufficient amount, it was ignited in the presence of the "congregation," and adoration was paid to the brilliant display thus made as a fair representation of their Sun God. Large and anciently formed pits are still existing on the Oil Creek flats, supposed to have been formed either by the Indians or the French, who were the first settlers of the country. If not these, then they were placed there by some prehistoric race, who doubtless also gathered the precious liquid.

The inhabitants of the valley of the Muskingum, at Marietta, Ohio, narrowly escaped learning the importance of this product as far back as the year 1819. Dr. S. P. Heldreth of Marietta, in the *American Journal of Science* (1826), speaking of the borings for salt water, says: "They have sunk two wells, which are now more than 400 feet in depth. One of them affords a very strong and pure water, but not in great quantities. The other discharges such vast quantities of petroleum, or, as it is vulgarly called, seneka oil, and besides is subject to such tremendous explosion of gas as to force out all the water and afford nothing but gas for several days, that they make but little or no salt. Nevertheless, the petroleum affords considerable profit, and is beginning to be in demand for lamps in workshops and manufactories. It affords a clear, brisk light when burnt in this way, and will be a valuable article for lighting the street lamps in the future cities of Ohio."

With all these facts in view, it is a singular, not to say strange, circumstance that petroleum should have remained unappreciated as an article of commerce such a great length of time, even after its many valuable illuminating properties had become quite well understood. Of course the rule which applied to circumstances of this character in the ages prior to the discovery of the power of steam and electricity, by Sir Isaac Newton and Benjamin Franklin, applies also to the case in point—the development of petroleum products. It required the genius of that live and active American to accomplish the philosophican wonder of descending into the solid rock for the purpose of extracting or drawing therefrom its liquid wealth.

On the first page of this number of THE AGE will be seen a correct portrait of the gentleman, Col. E. L. Drake, to whom belongs the credit of establishing the system now in vogue for obtaining the vast supplies of this great and beneficial product. It is true there are other aspirants to this honor, but to Col. Drake unquestionably belongs the dignity. Petroleum, as shown above, was known ages before his birth, and it was gathered, barreled, bottled, and in various ways utilized, but until Col. Drake became inspired with the faith of drilling the solid rocks in search of it, in A. D. 1859, the real source of supply was entirely unknown. We have seen proper, therefore, to adorn the first page of our magazine with his portrait, and elsewhere will be found an interesting sketch of his life, which begins the first chapter in the history of petroleum developments in the State of Pennsylvania.

PETROLEUM AS FUEL.

FOR more than twenty years the subject of utilizing petroleum as fuel has glimmered before the public in a sort of lurid, magic-lantern-light,—every difficulty magnified a hundred-fold and every somewhat promising result exaggerated to represent full and final triumph. Hundreds of times the shout of "Victory" has gone up, and half a world has listened to the echo—*vox et praeterea nihil!* Naturally it has come to be supposed that no claim to success can possibly be valid. And yet, there is no monstrous lion in the path; a little courage, a little steadfastness, a straight course along the plain highway of common sense, and the goal is won.

If some thoughtful consideration be given to the efforts of those who have heretofore striven to burn crude oil, it will be discovered that they have been outside the limits of practicability. Experimentors have been looking afar off for a glimpse of that beautiful certainty that has been just ready to burst into flower at their feet. Nature's equations are to be solved, reasonably, upon the very slate where she writes them,—not projected, through distorting lenses, into vacant space, and figured out on the air.

This particular problem may be fairly stated thus: Given,—a fluid so gaseous that hasty ignition with partial confinement may be followed by dangerous explosion, yet withal so carbonaceous as to be incapable of complete combustion under ordinary furnace-conditions,—to burn that fluid safely, wholly and advantageously, in small furnaces or great,—so compelling it to do, not reluctantly, its full share of the world's work.

Let us consider the question of safety first. Crude oil does not take fire under wind and sun; is not explosive in barrel or tank provided a little space be left for liberated gases; will not invite the lightning unless a stream of ascending vapor be allowed to escape, which, like the warm current from any chimney, may possibly act as a conductor; and when properly stored and not actually subjected to flame or abnormal heat, is no more mischievous than water.

It is easy to construct a protective tank—one that shall allow escape of gas or entrance of air (preserving necessary equality of pressure), yet one that, if violently rocked or overturned, will not spill its contents; easy to dispose of ascending vapors before they can reach and mingle with the atmosphere; easy to shield storage tank and conveying pipe from fire or dangerous heat; and easy (it has been found) to admit the liquid fuel directly to any furnace in such a manner that the source of supply cannot possibly be also a source of danger.

Outside of the firebox, therefore, safety becomes assured. It remains to provide against any possibility of danger *within* the firebox. At this point the question of safety becomes merged in that of adequate combustion, and the second "unknown quantity" of the equation remains to be discovered.

Now, if ever so small a quantity of crude oil be suddenly exposed to flame, its lighter elements volatilize almost instantaneously and burn or escape with draught, in visible or invisible currents, leaving the bulk of its carbon unconsumed, and thenceforth practically unconsumable.

Here is where countless experimentors have gone astray. Finding that nature failed to do the entire work spontaneously, instead of encouraging and assisting her, they bent all their energies toward confirming her inability; they insisted that the gases of petroleum *must* be liberated from its grosser elements; they contrived a thousand ingenious ways of doing what never ought to be done; and the records of the Patent Office are written over black with diagrams and descriptions of their "generators" and "hydrocarbon retorts." In short, a difficulty, that a little careful study of simple law might have quite disposed of, became under their Herculean efforts a mountain that the gods themselves could not clamber over. They imitated, in this, Gœthe's "Faust," who when he had found "Mephistopheles" in his room in the guise of a small dog, easily to be kicked out, petted and fed him until the puny creature grew to be his unconquerable master and tormenting devil.

And yet how apparent the fault! How evident that the difficulty is to be avoided, not adopted; eliminated from the equation, not retained to confuse all calculating and upset all demonstration.

Oil must not be subjected to the danger of complete volatilization previous to the instant of ignition. Its finer elements, as they catch fire, must be forced to wrap each atom of carbon around, as with a blazing garment, and whirl it on, "dissolved in fervent heat," to add inestimable value to their own fierce flame.

This fundamental principle, which our own unaided studies and experiments have enabled me vividly to perceive, seems never to have presented itself even to the most astute of

those to whose mistaken efforts we have been alluding. As a consequence, nothing that they have done has proven of value. Their working furnaces, if made by self-heat to vaporize that portion of the oil susceptible of vaporization, have required to be well fired with wood or coal first. But arrangements for ventilation and draught entirely suitable to solid slow-burning substances are not by any means well adapted to subtle and quickly ignited fluids; nor in changing fuels, under these conditions, can any adequate change of method in supplying air be effected. Should a coal fire be kept continuously upon the grate, it may be admitted, indeed, that too much air will not enter the furnace; but how can it be proven that, after air shall have worked its way through the burning mass, there will be sufficient oxygen left to combine with and consume all the atoms of the injected or gasified petroleum? Should a coal fire be *not* kept upon the grate, how is the air supply to be controlled at all? And what certainty will there be that the open fire-box will not be so cooled by draught as to insure waste of fuel?

Moreover, the introduction to a roaring fire of this dangerously-compounded substance, may (and often does) result in the sudden liberation of such a quantity of gas that, failing to ignite on the instant, it demonstrates itself wickededly, and brings poor wretches to grief.

Suppose, however, that a furnace be constructed exactly as it ought to be in order to adequately consume petroleum vapors. Here is a case where in order to cook your hare he must first be caught; there will be no vapors to burn until they shall have been driven from their carbonaceous associates in some generator or retort, set in some supplementary fire-box, and kept at red heat by coal or wood. In that case they may rush into the furnace proper, and if once fairly ignited without explosion (a ticklish matter), may heat it to perfection, provided opportunity can be given them to equally diffuse themselves therein before streaking away in flame through the smoke stack.

Admirable! Two furnaces to do one work! Half the heating properties of the oil left behind in the one, while the remaining elements betake themselves to the other for combustion! Generator or retort gradually filling up with deposited carbon, so becoming useless and liable to explosion from lack of vacant space! And half as much coal or wood burned in performing these brilliant exploits as would serve to run the working furnace itself, without so much as one scorching breath from this petroleum demon!

Would it be profane to hint that a certain unmentionable place, celebrated for its intense heat, would have cooled off long ago, had these experimentors managed its fuel supply!

All these failures have but demonstrated that there can be no success without actual atomization of the fluid before it be attacked by flame. This vital truth was first partially, if not wholly, recognized by one who, in 1863, issued a patent (No. 39,918) claiming to combine oil with super-heated steam, admitting them, "in a fumous body," into the fire-chamber. Many made haste to follow his lead, and many followed after them, all claiming more or less originality, notwithstanding evident appropriation and infringement. We are not aware that the real inventor ever troubled himself to make war upon his imitators, (some of whom may have added a little value to his work, but not much); and it is not for us to assault them. Yet since his patent has expired and the initial method is open to all, it cannot injure any to state critically what we conceive to be its faults.

There is the more necessity for criticism because of the fact that the public has been and very likely will yet be, forced to read startling accounts of similar experiments, and prophetic reiterations of magnificent result. Every few months a fresh wind blows up from some quarter, streaming out the flag on which we read, "Petroleum as Fuel." Call and question the standard-bearer and back comes the "old, old story,"—"Oil and steam;" or, to give the voice greater resonance and volume, "Superheated steam and atomized hydro-carbon liquid."

Something *has* been done with this method. Among the oil-bearing hills of Pennsylvania where coal is unattainable, and even wood comparatively expensive, many hundreds of these so-called "steam-jet burners" are being used in small boilers for pumping and drilling wells. Carefully managed, they give pretty good satisfaction considering all the circumstances, but show no desirable result, as regards general competition with wood or coal. In fact the method is not safe, not reliable, not economical, not available for heavy work.

It is unnatural, because it presupposes that a terribly inflammable substance cannot be trained to begin and carry on a fire without far-fetched assistance. To use a "steam-jet burner" one must have steam; to get steam one must build

a fire and thoroughly heat the boiler from which it is to be drawn; to build a fire one must have wood or coal, unless one pitches the oil by pailfuls into the fire-box,—so wasting fuel, and making all heaven redolent of petroleum smoke.

It is not safe, because when valves are first opened and steam with oil (sometimes air also) are allowed to rush mingling into the "fiery furnace," a little over-supply will result in an explosion of gas that may send the operator away on a fool's journey without any errand. At best we never knew any man in the habit of managing such burners, to take any pride in his whiskers or the length of his eyelashes.

It is not reliable, because the orifice that admits oil into the steam-channel is necessarily very small, and particles of dirt or rust, floating in through the feed-pipe, may close it partially or completely, in which case flame dies and heat is reduced. Worse than this, such particles may be suddenly ejected and a fresh supply of oil be thrown, after into a hot but not blazing chamber. Explosion invariably follows, and explosion often means danger to life and conflagration of property.

It is not economical for many reasons. We have already urged that solid and liquid fuels require different conditions of draught and ventilation. Now the ordinary furnace arrangement of boilers must be kept intact in using these "steam jet-burners," in order to allow the burning of coal or wood in getting up steam; and air will be admitted in such a loose, wandering fashion as to undo much of its own work.

The necessity for supplying atmosphere with discretion will be more apparent when we consider that nearly four-fifths of its bulk is inert nitrogen and cools the fire its oxygen kindled. Again, if these burners could possibly be applied to manufacture (as of iron, glass, etc.), they must appropriate the steam generated by a supplemental furnace, and by that appropriation, very likely, hurl into the working fire an element at variance with the requisite conditions for obtaining high heat. If steam be super-heated it yields two liberated gases, oxygen and hydrogen, both of which are highly inflammable, and will assist other fuel in creating an intense fire; or if it be merely dry, a limited quantity, striking in upon a violent flame, will readily super-heat therein, and be of value. But half the time, by this mode of supplying oil, more steam gets into a furnace than can possibly super-heat, and it becomes an enemy rather than a friend. To super-heat it before it reaches the flame, while certainly not economical, is barely practicable, because of the difficulty of procuring super-heaters of suitable material. Nothing has been tried, we think, except iron, which, having a strong affinity for oxygen, thievishly appropriates that very important constituent, and besides robbing the furnace, becomes itself presently worthless from oxidation.

But after all is done, the hurling of oil and steam together into the fire, from a single discharge-pipe, is more or less destructive to boilers and presumably to all furnaces. In the generation of steam, fire-box and flues should be swept by the *flame* of consuming oil, *not* by its half-kindled particles. Convection of heat is one thing, convection of fuel another; by the one we get the best result, by the other the poorest. Moreover, the flying spray of mingled steam and oil can with difficulty be made to spread equally, and upon equal heat economy largely depends.

It follows that from this method we can expect no safety, no reliability, no exactness of feed, no steadiness of heat, no certainty of air-supply, no economy, no absolute SUCCESS!

In the generation of steam it is the boiler that requires to be heated, not the floor of the fire-box; and certainly no method of so distributing this "fumous body" as to prevent downward diversion has been discovered. Here you have convection of heat, indeed, but a waste of nearly one-fourth the fuel from misdirection.

With all due respect to our predecessors, they seem to have ignored existing laws and attempted to create new ones.

In very truth this problem is solvable. Petroleum can be burned safely, steadily, economically; it can be made to heat cold furnaces with the aid of no other fuel than a lighted torch; it can be so admitted to the fire-box as to give any desirable breadth of flame; it can be atomized without the aid of steam, and forced to send its particles of carbon up into a raging fire before their attendant gases shall have had time to forsake them; it can be fed with absolute precision, so that not one drop more nor less than is wanted shall reach the combustion chamber; and it can be so well consumed that but a minute fraction of its bulk, if any, will be left in the burner, and absolutely no smoke will make itself visible at the smoke-stack. We know that all these things can be done, because they have been done.

THE REAL ESTATE MARKET.

TO those who have never visited the oil country, it may be, and no doubt is, a matter of surprise to see so many large real estate sales reported through our daily papers. To those familiar with the habits of our business men it is no surprise; on the contrary, it is expected, as a matter of course. For the information, then, of "outsiders," it may not be out of place to add a word or two about the producers as business men. We need hardly say that, as a class, they are bold, shrewd speculators, seldom visionary, quick to reach a decision, always ready to buy or sell, or give or receive an offer for property, large or small, of one thousand, fifty or even one hundred thousand dollars. When an undeveloped piece of property is purchased, it is soon made to feel the power of this go-a-head spirit, and a short time finds it fully drilled. They are then ready to sell on a good profit, and restless until this is done, and they have found another "world to conquer;" or, to be more explicit, another tract of land to drill and the tools again started downward in the hunt for wealth. This desire for sudden wealth and change is nothing more than the spirit which actuates the man who sells one horse and buys another, and is only *mirabile dictu* on account of its universality among oil men as a class. There are, of course, exceptions to this rule as in all other rules, but the exception is a *rara avis* in the oil country. Another peculiarity of the oil man is the fact that the time or season of the year to commence operations makes little difference to him, for truly "December's as pleasant as May;" and he waits not if mud is deep, or rain, snow or sleet combine their forces against him. He is just as contented and happy in his rubber coat and long boots as in summer clothes and low shoes.

But pardon this wandering from the original subject, and we will now give a few thoughts and dry statistics on the real estate business. The year has been one of many sales, exceeding in amount, if not numbers, that of last year. In the first quarter of the year the sales were few as compared with the closing quarter of 1880. A dark cloud of uncertainty and doubt was hanging over us, as to the unknown quantity to be produced from the Mills and Mullen well south of Big Shanty, the Blue Jay south of Sheffield, the Stone Hill well of the Union Oil Company north of Stoneham, and last and not least, the Bingham and Moody tracts north of Big Shanty. To all appearances they were capable of producing alone enough of the greasy fluid to supply the trade of the world. But even this dark and discouraging outlook did not dampen the ardor of the irrepressible producer or stop the drill. On the contrary, transfers, though few in number, were still reported. In the Warren district we have the report of one sale of $50,000, one in the Bradford district of $50,000, and one over that amount. These were a few of the largest sales as reported, the gross amount for the quarter being $552,300.

In the second quarter, April not only melted the snows and ice that for so many months had held us in its arctic grasp, and started the grass to grow on our hill-sides and in our valleys, but began to remove the doubts and darkness of the "winter of our discontent," and through the opening clouds we could see light wells where we had expected "gushers;" dry holes where we had no doubt of getting good wells; and, above all, we could now see the belt fully defined on the Moody tract, and beyond, in the dim light of the future, the hope-deferred dollar oil—this *ignus fatus* that is the producer's pillar of cloud by day and his dreams by night. This rosy outlook added new life to the trade, and the sales alone for April exceeded $300,000. May and June sales continued fair, with increased sales in the Allegany and a decrease in the Warren district. The second quarter closed with sales amounting to about $1,175,000.

In July and August we find the sales were nearly all "options," the parties purchasing paying a certain amount of money in hand to be forfeited in case of non-fulfillment of contract. Sales in the other districts show a decline in numbers as compared with May and June. This decline was due to the large prospective production of the Allegany district and its then undefined limits. September again changes this "bearish" outlook, several dry holes in the immediate vicinity of good wells making the Allegany district uncertain as compared with Bradford, and to some extent defining its limits. The sales in the third quarter of the year were but little in excess of the second, amounting in all to about $1,250,000.

In October we find the Allegany field more clearly defined, but within its limits capable of producing many good wells. The uncertainty of its wells, however, as compared with Bradford, and the well known decline in the other districts, made good properties scarce in the market, and those that were offered found quick sale at fair prices. The gross sales for the month were nearly double in amount that of the first

quarter of the year, being $913,000. In November we find the Allegany field nearly encircled by dry holes, with a gas streak of uncertain width running across its centre, and yet capable of producing a large daily production. Even this, however, is not as discouraging as the outlook at the beginning of the year, as then we had untold acres of territory to drill and for sale, and now we have little of the former and none of the latter except with production. The sales during this month have been about equal to that of last month.

The aggregate sales of the year thus far give us the grand total of $4,290,300.

A REMINISCENCE OF JOHNNY STEELE.

IN the first oil report ever issued, which we re-publish elsewhere, mention is made of the operations on the Widow McClintock farm, near Rouseville. It will be remembered that Johnny Steele (or "Coal Oil Johnny," as he was more familiarly called,) inherited the widow's property at her death. He being then about twenty-one years of age, was as wild as a Mustang colt, and knew not what to do with the vast fortune so suddenly acquired. The widow had been getting royalties from the big wells found on her lands, and the product bringing a high price, she practiced the habit acquired through years of patient industry, suffering and privation. She hoarded her money in an old broken tea-pot, and when she died $14,000 in gold was found. She had exchanged her currency, which she had but little confidence in, for the shining metal which glimmered before her eyes with an added lustre. Death claimed her decrepid frame, and Johnny Steele claimed her property, before the big wells were found which made him a millionaire 'ere he could possibly realize the change. The hitherto quiet valley was changed into a bustling oil field. Johnny had, with his limited acquirements, read of the wonders of the large cities of New York, Philadelphia, Boston and other busy marts, and resolved at once to spend some of his princely fortune. His career and mode of living was the sensation of the time, notwithstanding the fact that the war had broken out and its important events would naturally claim precedence. The Oil Prince was known to buy horses and carriages and give them to drivers who had shown him the town. He bought and presented a minstrel troupe with a new wardrobe, and a diamond pin for each member of a company of twenty-two performers. The fact of his buying out a hotel to get rid of a disagreeable landlord, and then giving the hotel to some one who had done him a trifling favor, is well known. Taking a club with him one day into a China store, he broke wagon loads of the beautiful ware before the salesmen could recover sufficient presence of mind to stop him. When asked what he meant by such mad pranks, he said he wanted to see how much he could destroy in a given time. To settle the bill was but a moment's delay, and a pleasure, to the unfortunate possessor of so much wealth. The brilliant career of this mad-cap spendthrift was brought to a sudden close by the big gushers giving out, and the price of oil going down until it was not worth one-quarter the cost of the barrels in which it was shipped. It ran down the Creek unheeded by any one. Lakes of it collected on low ground, and the market price, when there were any quotations given, was ten cents per barrel. The prodigal returned home penniless, and was forced to take the position of baggagemaster at Rouseville Station, on the line of the Oil Creek Railroad, which had been built during his absence. After working quietly for some time at small wages, he went to Illinois, where he is, at the present time, working in a country store at $50 a month.

Time has worked wonderful changes in the oil country and her people, but no one ever had a more radical change in his fortunes than Johnny Steele.

A YOUNG man who formerly lived in Elmira, N. Y., is now engaged in the producing business, and has already achieved considerable distinction in getting remarkably good wells, made a visit to his old home a short time ago. He had just finished a good 40 barrel well, and was correspondingly happy. When he arrived in Elmira he was asked all sorts of, what seemed to him foolish questions, about the oil country and oil business generally. After answering innumerable interrogatories he became tired, and commenced guying them. When he was asked if any one ever fell down in an oil well, he was thoroughly disgusted. One of them asked him how tall the derricks were, and he told them 74 feet, of course. "What do you do with the derricks in winter?" "Oh we take them down and put them in the boiler house," was the answer. Headache posts, Sampson posts, bull-wheels, and fishing tools were all discussed in the same manner, and now the Elmira people feel as full of oil region knowledge as an encyclopedia.

THE FIRST OIL REPORT.

THE First Oil Report, which appears in this number of THE AGE, is very suggestive. It leads the mind backward over a period of twenty-two years fraught with wonderful changes and important developments in the world of petroleum. While in a literary, as well as a mechanical sense, it must be admitted the production is creditable; yet when compared with the reports compiled monthly in these days, it bears about the same relation to them that Col. Drake's drilling tools would bear to a set used by the driller of to-day.

If all other branches of American industry exhibited a similar state of progression, in the arts and sciences (pertaining to their respective necessities) in so short a time, it could truly be said that America was leading the world in its industrial pursuits.

But it is a pleasure to note this remarkable advancement in the production of our important staple. In no other business, perhaps, are there so many men of genius, so many men of pluck, enterprise and determination to win engaged, as in the oil business. While in other countries where petroleum has been obtained in greater or less quantity for ages there appear to have been no improvements made in the method of boring or sinking wells, the oil producers of this country have applied energy and genius to their efforts, and, as stated, in the short space of 20 years they have succeeded in revolutionizing the entire system of "operating for oil." There is not in use to-day of similar pattern so much as a single tool, from the wrench up to the boiler and engine, that was used by the early drillers. Even the derrick, though it retains a resemblance is no more the derrick of 20 years ago than a ten year old boy is a full grown man. The same may be said of all the other auxiliary implements. Whereas 20 years ago 3 and 6 months time was exhausted in drilling a well not more than 400 or 500 feet deep, wells are now sunk 2000 feet deep in 25 days.

Twenty years ago there were no daily newspapers in the oil regions, and none nearer there than Buffalo or Pittsburg. The paper from which the report above referred to was copied was, and is still, a weekly production conducted with a good deal of energy, as its first attempt to inform its readers of what was being performed around them in the matter of petroleum production fully attest. The first oil report will pay perusal. It was published July 11th, 1860, in the Venango *Spectator* and was the first general report of oil operations ever published. We have been permitted to copy it *verbatim* from the files of that journal and take pleasure in presenting it in the first number of THE AGE. The report was compiled by C. C. Duffield, Esq., of Titusville, who was at that time engaged in journalism:

A TRIP AMONG THE VENANGO WELLS,

COMMENCING AT THE MOUTH OF OIL CREEK, THENCE TO TITUSVILLE.

First R. Cross, 100 gas.

Wm. Cross 100 gas.

J. S. Colgin & Co.—depth not ascertained; at the well there is a strong vein of gas and a good prospect for oil.

Graff & Co., No. 1, 216 feet deep; No 2, 225. These are good wells; No. 1 yields six barrels daily and No. 2 eight barrels and improving.

CLAP FARM.

On this farm a company is operating composed of J. L. Carnagan & Co., Pittsburgh; Eveleth & Bissel of New York, and Arnold Plummer of Venango. At a depth of 91 feet they struck a first-rate vein, and on the day of our visit were pumping six gallons per minute. They have a first-class well. They are sinking four additional wells.

H. C. M'CLINTOCK FARM.

This farm was settled by the father of present owner in 1796 on a bar in the middle of the creek over the traces of an old oil spring where Indians gathered oil 60 years ago, and doubtless many years before. The surface shows all along the shore is good. Old vats are to be seen which are supposed to have been built previous to the occupation of the country by the French. There are trees now standing upon the earth thrown out in excavating for those vats whose growth shows them to be over 200 years old. When and by whom these vats were first constructed is beyond our knowledge. They are designed to gather the surface oil. Mr. McC. is building a hotel for the accommodation of oildom, and we predict will soon have a town and postoffice.

Here we found 12 wells in various stages of progress. One of those is pumping ten barrels a day, and another pumping twenty-five barrels, another 215 feet has yielded 70 barrels by pumping, and owners boring for deeper vein.

BUCHANAN FARM.

Rouse, Mitchell, Brown & Co. have two wells in pumping order. No. 1, 110 feet yielding 15 barrels, and No. 2, 160 feet yielding 18 barrels. There are several other wells in progress on this farm.

WIDOW M'CLINTOCK FARM.

Here we came to fine scenery and better roads. On bank of creek, stretching along to the distance of a mile or so, is as good meadow ground as found in the State.

On this farm we found the following wells:

Martin & Co., 100 feet, good show.

Bell & Co., 220 feet, pumping four barrels.

Neil & Chase, 150 feet, considerable oil and getting ready to pump.

Hibbard's well, formerly yielding ten barrels, is not now pumping. There is no failure of oil here, but the influx of sand and gravel has compelled the owners to commence sinking a new well and to abandon the old one.

M. Homan, 178 feet, oil plenty and will commence pumping in a few days.

King & Co., 140 feet, good show.

Hemick & Hays.—This is a four barrel well and is increasing in quantity.

RYND FARM.

Brewer Watson & Co., 150 feet deep and commenced to pump.

Parker & Co., 58 feet, no oil.

Pardue & Co., 120 feet deep, with show of oil.

Here we come to the mouth of Rynd's run, and on this we find the following wells :

McCaslin & Co., 30 feet.

Brown & Co., 60 feet.

Culbertson & Co., 30 feet.

Hovis & Co., 218 and considerable oil.

Jameson & Co., 60 feet.

Parker & Co., 80 feet.

California Company, 60 feet.

Rogers & Co., 118 feet—oil.

Bradish, 50 feet.

On Merkel's run, emptying into Ryan's run, we found:

Barr & Graff, 2 wells with good show of oil.

Ackely & McMullen, 60 feet and some show.

John McKissick boring with fair prospects.

BLOOD'S FARM.

Watson & Kerr driving pipe.

Landis driving pipe.

TARR FARM.

Smith & Co. 160 feet deep—some oil and strong flow of gas, as is the case at nearly all the wells on this farm.

Keisler & Co. driving pipe.

Crane & Co. 220 feet and good prospects.

Phillips & Co. driving pipe, 30 feet down with abundant surface indications.

Woodward & Nolls, 40 feet boring in oil.

STORY FARM

Anderson & Simcox, 146 feet; some oil; leaky drive pipe.

Reynolds & Co. leaky drive pipe.

F. Tarr commenced boring.

A. J. McClintock commenced boring.

HAYS FARM.

Dalzell & Emery driving pipe.

DAVISON FARM.

T. & C. McKee, surface oil and commencing to pump.

WASH. M'CLINTOCK FARM.

Kerr & Watson's No. 1—This is a good well now pumping 20 barrels daily.

Kerr & Watson's No. 2—Driving pipe.

BOYD FARM.

Patterson & McClintock 100 feet; good surface show.

Brookville Co. 130 feet and getting oil.

Snyder, driving pipe and getting oil.

SKINNER FARM.

This farm was lately sold to a Cleveland Company for $22,000. The amount of land is 200 acres. The company are boring one well and have commenced operations in several places.

Here we were compelled to leave the Creek and take our course for Cherry Tree and the house of Richard Irwin. The conversation here was all about oil, and now and then some remarks were made about oil just to change the monotony.

A Cherry Tree Company have a well on Ryno's run 116 feet and some oil.

Kane Run, J. Kerr, has oil at a depth of 100 feet.

On Weiss Run, S, Kerr's well is down 110 feet, with a good show for surface oil.

Jas. Shields & Co., 30 feet ; no oil.

From Cherry Tree we started for Titusville.

Titusville is a thriving little village, and owes its progress to Venango oil. On the flat upon which the town is built there are many derricks and wells in progress, but no oil has been discovered. The town is very irregular, and is lying around loose all over the flats.

Down the Creek we called at the following wells :

M. A. Plumer has three wells. One is in operation, and presents a good vein of oil.

Epley, Martin & Co., driving pipe.

Dr. Evans, driving pipe.

Sage, Ridgway & Co., driving pipe.

Robinson & Co , four wells, driving pipe.

Crosleys—The well in operation is yielding 10 bbls. and the company have another well in progress.

Kingsley & Co., two wells boring and some oil.

Sloane's boring.

St. Clair well, some oil.

JONES' FARM.

Three wells, all getting oil in small quantity.

JOHN FLEMING'S FARM.

J. Gillespie 160 feet, show of oil.

R. MILLER'S FARM.

Foster, Porter & Co., boring 50 feet.

Wilcox & Co , commencing.

Miller, Ward & Irwin 120 feet, show of oil and gas.

Mills & Co., 60 feet, show of oil.

G. SHAFFER FARM.

Buffalo Co., 100 feet down ; tools fast ; show of oil.

Jefferson & Co., boring 130 feet.

Whitney & Co., boring, 150 feet; good show oil.

Patterson & Co. boring 80 feet.

Gilson & Co., boring, 130 feet.

Titus & Co., boring, 210 feet.

Galey & Co., boring, 210 feet, running oil.

Cunningham, Stuart & Co., boring, 136 feet, show of oil.

Zuvers, boring, 174 feet.

J. L. SWING'S FARM.

Widow Mason, boring, 70 feet, show of oil.

Findley, 100 feet, show oil.

Peterson & Co., No. 1 driving pipe. No. 2 boring 65 feet. No. 3, 145 feet and show of oil.

Johnson, Wilson & Co., 30 feet.

Remensbury Co., 100 feet.

Gates & Mead, 136 feet.

W. RICKETS FARM.

Fulton, Hale & Co., boring, 69 feet.

Morey & Co., 130.

Hall, boring, 50 feet.

Allen & Brown, boring, 160 feet on Zuver's land.

P. BATTLE'S LAND.

Knapp & Co., boring, 70 feet and 23 feet, two wells.

Neilsburg Co., boring, 30 feet, showing oil.

Dempseytown Co., boring, 180 feet, showing oil.

Noble & Co., on Farrel's land, boring, 90 feet.

S. A. PATTERSON'S LAND.

Davis and others, boring, 150 feet, with a good show of oil.

Elliott, boring in oil, 130 feet.

Henderson & Bros. boring in 100 feet.

D. GREGG'S FARM.

J Humphries, commencing.

McKay, show of oil at 150 feet.

Graham and others, show of oil at 130 feet.

Buchanan & Co,, show of oil at 130 feet.

Hamilton, Hasson & Co., 30 feet.

J. FOSTER'S LAND.

P. Raymond and others, boring 30 feet.

Dean, Shaffer & Co., boring 147 feet.

Foster and others, boring 125 feet.

Simpson and others, boring 70 feet.

Gordon and others, driving pipe.

R. IRWIN'S LAND.

Dr. Hamilton and W. Irwin, boring 104 feet.

CLEVELAND CO.'S LAND.

Leland and others, boring 100 feet,

Davidson and others, boring 135 feet.

Boyd, Stewart and others driving pipe on John Bennehoff's land.

Darbs & Spaulding are boring 40 feet and getting oil.

Markle and others, boring 30 feet in rock. These two wells are on G. W. McClintock farm.

The Stackpole well, although a paying well, is being bored deeper.

Since writing the above we have received news of the success of the Tanner & Co. well at Titusville, and at a depth of 150 feet this company have found a rich vein, pumping one barrel an hour.

The Barnsdall well is said to be yielding ten barrels a day. These two wells are in Crawford county, a short distance from the Venango line.

Next week a list of Franklin operations shows wells 36 drilling, and an account is given of 11 producing from 5 to 25 barrels each. Three have gas at from 130 to 300 feet, and six are being tested with a good show.

At Tidioute 15 are drilling, and it is stated that above Plullyer's well a company are boring with an engine.

A correspondent of the Pittsburgh *Chronicle*, August 15, 1860, makes this statement :

Franklin product	31	barrels.
Franklin neighborhood	42	"
Lower Oil Creek	141	"
Titusville	125	"
Making total daily of	339	"

THE ALSATIAN OIL FIELD.

FIFTY miles from the old City of Strasburg in Alsace, there is an oil field that has been worked for several generations. It is about ten miles long and one mile wide, and is owned exclusively by a Frenchman named Jacques La Bell. Oil was discovered there as early as 1735 by Dr. La Bell, an ancestor of the present owner. Dr. La Bell was a naturalist, and was engaged in making investigations in that part of Alsace when his attention was attracted to the dark yellowish substance that oozed from the earth. The Doctor lost no time in testing the quality of the peculiar liquid, and finding it was a magnificent lubricator, concluded to search for the source whence it came. He accordingly sunk a shaft by digging away the earth, and blasting rocks encountered, to the depth of fifty-five feet. Here he found a conglomerate or sand formation which contained large quantities of the article. Being wealthy, he at once sought the French government, and from it purchased a tract of land 90,000 metres in extent, or about seventy miles square. For this it is said he paid the government fifteen cents an acre. As yet no attempt has been made to manufacture an illuminant from the product, a lubricant only being refined. This, however, is an excelleut article, and finds ready market at a profitable figure—the wholesale price varying from five dollars to ten dollars a barrel. The greatest peculiarity about this oil region is the manner in which the product is obtained or extracted from the rock. The same crude methods adopted by the La Bell of 150 years ago are the same used by the present occupant. The rock from which the first owner extracted the liquid, however, has long since been totally exhausted, and now the wells have to be sunk sometimes over 300 feet deep in order to obtain oil in paying quantities. The work of sinking a well in Alsace is performed in a vastly different manner to the American method. It is something in this way: A stone and brick chimney is erected on a solid foundation to the height of from 80 to 100 feet. Twenty or thirty feet distant from the base of this chimney the well is located, with a mouth six feet by twelve or fifteen feet, and the work of digging a hole in the ground with spade and shovel commences. The remainder can be imagined. Any person who has descended into a coal mine can form a capital estimate of this task. After reaching a depth of twenty-five or thirty feet a drift from the main shaft is run to the chimney, and an air passage with a strong draught is thus formed by which all impure gases are removed from the well. It is said that the method of ventilation is so nearly perfect that a death from impure air has not occurred in forty years, though in the sinking of one well from fifteen to twenty men are required. In the early days it required more, as a boiler and engine for hoisting purposes have been substituted for Alsatian laborers. This, we believe, is a slight innovation upon the original idea, though in all other respects the work is performed precisely in the same manner. When the oil rock is thus reached, which generally occurs from five to six months after starting, the oil is removed by buckets and drifts, or tunnels are made into the oil stratum in all directions from the main shaft. The oil, of course, is removed as encountered. just as coal is removed from drifts. The oil is thick and exceedingly heavy. It is said the cost of sinking one of those wells usually foots up $15,000, and but two of them at best can be sunk in the territory in one year. As the article is strictly a lubricant, the quantity produced is a matter of little intertst to the illuminating trade. But four wells are now producing in Alsace, and one is being sunk.

20,500 quarts of glycerine has been used thus far in opening the Allegany, N. Y., field.

GERMAN PETROLEUM.

UNDER date of August 1, 1881, Consul Du Bois, of Aix-la-Chapelle, writes as follows concerning the new petroleum wells near Hanover:

"During the year 1879 the United States exported to Germany over $10,000,000 worth of petroleum. In the light of new developments this immense trade seems to be seriously imperilled. At a small village called Peine, which is situated about twenty-five miles from the city of Hanover, a flowing well of petroleum was discovered about ten days since, that delivered 250 barrels in 168 hours, two-thirds of which is good oil and one-third water, with a salt element of two per cent. This product renders in refining forty-five per cent. of clear petroleum, which compares favorably with the best oil from the Pennsylvania region.

"The following is the geological condition of the soil: At the depth of 10 inches a fine sand with some granite and flint stone were found; 7 meters deeper a grayish-blue deluvial clay, and at 3 inches more blue clay and limestone; from 20 to 35 meters, marl clay in great abundance; 35 to 40 meters, solid rock with quartz; and from 40 to 48 meters, hard sandstone with sulphurous pyrites—at this point the first traces of petroleum are found; from 48 to 54 meters, a layer of sandy clay which contains strong elements of petroleum. From this point to the depth of 69 meters, where the flowing well was struck, there are different conditions, such as pourous sandstone, black and brown sand, and large quantities of pebble-stones.

"Six companies are already at work. The excitement is running very high, and the region has taken the name of 'New Pennsylvania.'

"Of course, if the hopes of Germany are realized, there will be a strong competition with the American petroleum, which to-day lights a vast majority of German houses, and the export of our petroleum will seriously diminish. This being the case, there are a few facts which our producers should earnestly consider.

"The burning test of American oil must be 100 degrees Fahrenheit. This is a fixed standard, and will be maintained by German experts, who will hereafter exercise the utmost vigilance in view of the immense interest centered in the home production. The oil must be of the very best quality. Petroleum reduced to a second or third grade by the extraction of the illuminating property must not be sent here to compete with the German product, which is said to be of an excellent quality.

"Until now but one important flowing well has been developed, and as the oil region is not very extensive, compared to the great oil territory of the United States, the Pennsylvania petroleum may maintain, in a measure, its enviable place in the German market for some time to come. The indications are that our producers will have to divide their German trade with the German producers, and, as this competition will be sharp, it would be well for the former to exercise every possible precaution to sustain the popularity of the American product in the European markets."

[A meter is 39.365 inches, which would make the above well about 230 feet deep.—ED.]

PURIFYING LUBRICATING OILS.

HERR Koellner of Neumhlen, near Kiel, Germany, has just introduced an apparatus for the purification of lubricating oil, rendering the latter fit for repeated use. The impure lubricant is gathered in a receiver, and from there slowly flows into a reservoir through a tube, a cock serving to regulate the flow. The solid particles held in suspension by the oil are here deposited, while the latter passes over a partition, and enters a second reservoir, where the last traces of solid material are precipitated. The oil finally arrives in a compartment containing two boxes filled with clean cotton waste; these two boxes are separated by a slight partition, and the oil, having passed through them, collects in a small basin, from where it may be removed by means of a cock. The intermediate reservoirs are also provided with cocks in order to facilitate the removal of sediment, and the various tubes are so arranged as to allow a free circulation of air. This apparatus is capable of furnishing about thirty kegs of purified oil daily, the amount depending to some extent upon the nature of the oil.

UNLIKE any other manufactured article exported to foreign countries, our refined petroleum alone is without a rival. England, France and Germany are sharp competitors and have had in a great measure the markets of the world to themselves. Now the irrepressible Yankee, not content with furnishing the light of the world alone is also competing with other countries for the mastery in almost every conceivable manufactured article.

PETROLEUM IN CALIFORNIA.

A SHARP competition exists between local California refiners and Eastern shippers who are represented by the Standard Oil Co. A good deal of the oil produced in California is used for lubricating purposes, not a little being used for the purpose of illuminating, says the *Commercial Herald* of San Francisco. The following brief summary has been furnished to us by parties largely engaged in the business in this State. Crude production of California petroleum—Los Angelos County, in 1878, 12,127 bbls; 1879, 14,682 bbls; 1880, 28,356 bbls. Ventura County, in 1878 (estimated) 3,100 bbls; 1879, (estimated), 4,000 bbls; 1880, 7,168 bbls. Santa Clara County, last three months of 1881, in 1879, 1,176 bbls; 1880, 6,875 bbls; first three months of 1881, 3,346 bbls. Each barrel contains 42 gallons, which gives us for 1878, 639,524 gallons; in 1879, 834,036 gallons; in 1880, 1,780,758 gallons, and in three months of 1881, 140,532 gallons. The imports from the East for the past three years and six months are: For 1878, by sea, 283,387 cs., and by rail 2,271 bbls and 46,867 cs; in 1879, by sea, 157,351 cs, and by rail 11,570 bbls and 75,816 cs; in 1880 by sea 49,238 cs., by rail 1,844 bbls and 58,886 cs.; in 1881, (six months), by sea, 100 cs., and by rail 1,128 bbls. and 12,329 cs. These figures show a great and steady falling off in the receipts of the Eastern and a corresponding increase of the California output, which we have reason to believe will soon enable us to dispense with Eastern oils entirely. A prominent firm in this business places the annual consumption of Eastern oils on the coast at about 325,000 to 350,000 cases of 10 gallons each. More or less of this oil comes here in barrels of 42 gallons each and in tanks holding the equivalent of 75 barrels. Leading dealers give us the following quotations: Low-test, 110 deg., high-test, 150 deg., 20c.

CANADA OIL.

A CORRESPONDENT from Port Sarnia, Canada, says: "About twenty wells are drilling in the Canada oil region at present, and as many more are projected in the immediate future. The principal interest centres upon developments nine miles east by south of this place, at which place considerable activity is manifested. There several wells have been finished recently, with satisfactory results to the owners, and others are due shortly. The oil is dark, extremely odorous, and nearly as heavy as the lubricating article produced at Franklin. It is found at the average depth of 450 feet, beneath which salt water exists in profusion. The field presents various interesting characteristics, which will be considered fully in a subsequent letter. Three miles east of Sarnia three new wells are producing fairly. The oil is exceptionally good, 82 degrees gravity, and sold for $6 at the wells. This is a new development, brought into notice a few months since by a strike on the McGregor farm, and likely to be of some importance. Four wells a mile north, and two as far south, proved dry, but others now under way will help decide whether the prolific streak extends further west or is a merely a pool of respectable magnitude. Pennsylvania parties have secured large tracts of land, and leases are now in brisk demand. The Canadian Parliament has enacted legislation that affords home manufacturers the utmost protection, by virtually prohibiting the import of American kerosene. One consequence is to advance the price on this side, crude selling at from $1.65 to $1.90 this season, while refined is retailed at from 30 to 40 cents per gallon. The latter extortion is assisted greatly by the combination of the refiners, who exhibit a spirit of grabbing monopoly that would do no discredit to the Standard folks themselves. The daily production of the Canada field is not above 1,650 barrels. Most of it is refined at Petrolia and London and supplied to consumers in every part of Ontario. Torpedoes are seldom used, and the pipe-line system has not been brought to a state of perfection.

THE FIRST DERRICK.

THE derrick erected by Col. Drake to drill the initial oil well in 1859, was removed to Philadelphia by Alshouse and O'Dennell in 1876, and exhibited as a curiosity. The enterprise, in a financial sense, was a failure, as the admission fee failed to reimburse the proprietors for the outlay incurred. Had they used the original tools and proceeded to sink a genuine well, instead of "playing drill," they doubtless would have succeeded more satisfactorily. It is said the derrick, soon after the close of the Centennial, succumbed to the ravages of the elements and became a mass of ruins, unsightly and uninteresting to the beholder.

DESERTED VILLAGES.

WILD-CAT wells are being drilled in Potter County, Pa., by Joseph Tate, of Bradford, as well as the Germania Oil Co., of New York. To this secluded county Ole Bull brought his countrymen. The following graphic account of his efforts may be read with interest: "Up among the forest-covered mountains of Potter county are three small villages, or rather the remains of them. They were founded by Ole Bull. Something over a quarter of a century ago the great violinist went far back from the frontiers of civilization and endeavored to start a Norwegian colony among these wild mountains, where only the lumbermen disputed the title of the original tenants. He purchased forty square miles of land and brought over from Norway five or six hundred of his countrymen to make a settlement in this wild region that is said to be not unlike the rugged hills of their native land. The houses built by the settlers have many of them tumbled down; the clearings made have grown up with bushes and the inhabitants have sought homes elsewhere, many of them returning to the fatherland that they left only to find disappointment in the New World. The villages were never large except in name and now they look very small and dilapidated. The houses were built in a strange, foreign fashion, with windows and porches of unaccountable shape in most unexpected places, and a traveler can easily believe he is in any place except America, so little like home do the buildings look. The steep roofs and up-stairs porches are like those on the houses of colonists left behind in Norway and would look very strange if there were any American dwellings to compare with them, but this settlement is far away from any other and the traveler finds only the strange look of an unnaturalized country."

GRAVITY AND DENSITY OF VARIOUS SPECIMENS OF OIL.

THE oil of Baku, Russia, as produced near the centre of the area, known to be productive, is clear and light like naphtha and nearly as pure as if distilled. It is said it closely resembles Sauterne wine. That obtained near the sides of the territory is changed from a yellowish green to a reddish brown, and finally to asphalt—dark. California is leek green when first produced, but changes in color to brown and black by exposure to the atmosphere. The Canadian oil is black and possesses a most offensive garlicky odor. The oil of Rangoon, India, is very similar in color and gravity to that found in this region. The quality is tested by the specific gravity of the oil in all cases. This is taken by Baum's hydrometer, and shows quickly the standard of all productions, the higher degrees marking the lighter and *vice versa*. Bradford oil stands the test at 46 degrees, Tidioute 43, Butler and Clarion county 47; Franklin heavy oils range in density from 28 to 36, and Ohio yields a substance of 25. The oil of Allegany county, N. Y., bears a record of from 38 to 41. That of Oil Creek stands at 46. In Allegany county, N. Y., a species of oil was discovered near the village of Scio, in a well sunk last summer, which possesses the composition of that obtained in some of the petroleum districts of Burmah, being of the consistency of goose grease. Petroleum contains ten different articles of commercial value, namely:

	Sp. Gr.	Baum's.	Boiling Point.
Rhigolene	.625	—	650 F
Gasoline	.665	85 °	120
C Naphtha	.706	70	180
B "	.724	67	220
A "	.742	65	300
Kerosene	.804	45	350
Mineral Sperm Oil	.847	36	425
Neutral Lubricating Oil	.883	29	575
Parafine Wax	.848		
Residum			

RECORD OF THE DRILL.

THE following is a record as reported, by O. P. Tayler, Esq., of his first successful venture in the Allegany, N. Y., Oil Field. The well was known as "Triangle No. 2:"

106 feet of surface formation
30 feet blue shale.
40 feet white rock.
15 feet red rock.
5 feet chocolate shale.
16 feet red rock and shale.
4 feet chocolate shale sand.
8 feet water rock.
12 feet grey stone.
6 feet red rock
30 feet slate rock.
14 feet gray stone.
3 feet white stone.
4 feet gray stone.
4 feet sand stone.
7 feet dark gray stone.
30 feet slate.
20 feet light gray stone.
21 feet slate and shells.
79 feet light colored slate.
4 feet shell fossil remains.
31 feet slate, soft.
22 feet *Argillaceous sandstone. First sand.*

30 feet shale.
4 1-2 feet shell and fossil remains.
1 foot bright copper colored shell.
52 feet slate.
4 feet shell and fossil remains.
21 feet slate.
1 foot shell and fossil remains.
21 feet slate.
1 foot shell fossil.
47 feet shale, soft.
40 feet second sand.
80 feet shale and slate.
61 feet slate. shell and fossil remains.
9 feet shell and fossil.
119 feet shale.
20 feet excellent quality oil sand, salt water.
104 feet shale.
17 third sand soft.
17 feet third sand, not so soft.
10 feet third sand, bottom same as top.
24 feet pocket in shell and slate.
1,177 feet total depth.

OIL STOCKS.

MONTHLY STATEMENT FOR NOVEMBER OF THE PRODUCERS' COMMITTEE.

STOCKS were received from 8,207 Bradford wells November 1st. Out of this number figures were given so that a comparison could be made between the stocks at 7,696 wells October 1st and 7,817 November 1st. The parties who owned 7,696 wells on the first of October had 7,817 on the first of November. The averages in merchantable oil for each section were as follows:

DIVISION OF FIELD.	Number wells Oct. 1	Average per well Oct. 1	Number wells Nov. 1	Average per well Nov. 1
		Bbls.		Bbls.
Tuna Valley	241	7.96	242	77.1
East and West Br'ches	1117	110.7	1144	112,4
Kendall Creek	1267	68 7	1299	74.9
Foster Brook	1007	60.6	1019	59.2
S, M. & Rixford	634	62.5	639	64.2
Cole Creek	1109	108.6	1129	118.3
Tram Hollow	593	57.9	596	61 9
Oil Valley	483	84.0	486	72.7
Kansas Branch	179	61.8	181	73.8
Indian Creek	387	87.9	399	89 7
Meek's Creek	72	63.4	73	55.9
Four Mile	287	67.1	290	83.8
Kinzua	124	147 0	126	149 1
Miscellaneous	196	92.1	194	100.2
Total	7696	82.0	7817	85.4

Reports from 7,817 Bradford wells show an average increase of stocks in wooden tanks during October of three and four-tenths barrels per well. Gross averages can be obtained from the above table by adding twenty-two barrels to the figures showing the averages of merchantable oil in the different sections.

PRIVATE IRON TANKAGE.

Reports from all the private iron tanks in the Bradford district were received for the month of October. The subjoined table gives the gross stocks in these tanks in each section of the field on the first days of October and November:

DIVISION OF FIELD.	Gross stocks in private iron tanks Oct. 1	Gross stocks in private iron tanks Nov. 1
	Bbls.	Bbls.
East and West Branches	15725	18361
Kendall Creek	28330	28094
Foster Brook	25474	25246
Summit, Marion and Rixford	5606	5606
Cole Creek	420255	58726
Kinzua	32310	27979
	527700	164812
	164812	
Decrease during Oct	362888	
Daily decrease during Oct	11706	

A comparison of the totals shows that the gross stocks in private iron tanks were reduced 362,888 barrels during the month, or 11,706 barrels daily, leaving 164,812 barrels in private iron tanks on the 1st of November.

BRADFORD'S OCTOBER PRODUCTION BY THE STOCK REPORT.

The number of producing wells in the Bradford field, exclusive of Richburg, is estimated at 11,123 October 1st, and 11,310 November 1st. These figures are known to be near the exact number with which the lines are connected and from which oil is run. In the future an effort will be made to ascertain the number of abandoned wells each month. From the preceding data the following statement is made:

Time.	No. wells.	Average per well.	Total Stocks.
October 1	11123	82.0	912086
November 1	11310	85.4	965874
Increase in stocks during October			53788
Average daily increase			1735
Daily decrease in gross stocks in private iron tanks			11706
Total daily decrease			9971

The average daily pipe line runs in the Bradford field, exclusive of Richburg, were 75,895 barrels.

	Barrels.
Bradford Pipe Line Runs	75895
Daily decrease in stocks	9971
Bradford's October production	65924
Bradford's September production	67350
October's daily decrease	1426

According to the above data Bradford's October production declined 1426 barrels daily from that of September.

THE OCTOBER RUN REPORT.

Exact figures on stocks at wells October 1st and November 1st, with runs from the same wells, were forwarded, so that the average daily production for 3899 Bradford wells could be computed for the month of October. The appended table furnishes all the data used in computing the averages:

DIVISION OF FIELD	Number of wells October 1st	Number of wells November 1st	Stock at wells October 1st	Stock at wells November 1st	Pipe Line runs during October	Average daily production per well during Oct.
Tuna Valley	171	171	18577	17083	21942	3857
East and West Br'ches	447	456	79081	81207	124327	8920
Kendall Creek	587	594	64874	70649	87097	5029
Foster Brook	554	555	69973	70149	75341	4386
S., M. and Rixford	308	308	27648	28782	41056	4419
Cole Creek	646	660	80837	161088	287886	7661
Tram Hollow	268	270	222846	23675	41069	5003
Oil Valley	311	14	33390	40019	55398	5339
Kansas Branch	48	348	3925	3695	4318	2747
Indian Creek	187	193	21009	22673	38725	6740
Meek's Creek	24	24	2119	2149	2647	3598
Four Mile	118	119	10738	11333	21545	6001
Kinzua	77	77	39025	38311	17501	7032
Miscellaneous	153	153	14301	15253	17343	3857
Total	3899	3942	696543	575063	836195	5831

Runs from a number of wells have been received since the telegraphic report was sent out. The use of these figures accounts for the change in the final average from 5 and 855-1000ths barrels to 5 and 831-1000ths barrels per well. In some instances runs were reported from different groups of wells from those received in September, hence the average for the two months will not admit of an exact comparison. If the stock report did not check the run report, it would not be safe to draw general conclusions on the field from an average afforded by 3,899 wells.

The Producers' Committee, consisting of John Brown, E. H. Barnum, Bateman Goe, A. B. Smith and E. F. Willets, have examined the above report, and it meets with their approval.

J. C. McMULLEN, Compiler.

THOUSANDS of barrels of oil have run to waste in the Richburg field for want of sufficient tankage. The United Pipe Lines are increasing their facilities for piping and storing oil, but thus far have been unable to keep pace with the rapid development of the territory.

BOLIVAR, N. Y., one of the new oil villages of the oil region of New York, will soon enjoy the luxury of gas. The Empire Line is to furnish the supply.

THE OUTLOOK.

DURING the eleven months of the present year some very important developments have occurred in the producing regions, especially in the Middle and Northern districts. In the McKean field, in January, the rich pool in the vicinity of Aiken, which included an extensive area of the Bingham estate and also a large block of the Moody tract adjoining, was exciting the liveliest attention of oil operators, and it was but a short time thereafter till the prolific belt extending through the forest in a southwesterly direction from Aiken to Big Shanty, and some distance beyond, was developed. The drill was therefore rushed to a degree never surpassed in the history of the field. Only four months' time, however, was required to remove the cloud which portended danger regarding this unexpected and exceptionally rich deposit. It was found, like all other well filled pools, to have certain defined limits. But just as this section began to fade, and hopes were "highly" entertained of the speedy return of a better state of things, the news was received of a new strike in the Allegany (N. Y.) field, (remote from all former developments) which had reached the proper sand level and was exhibiting symptoms of a dangerous stripe; this was the old Richburg well. What has occurred as a result of that strike is well known to the citizens of Oildom. During the first four months of the year but thirty wells were completed in that field, and fifteen of these were total failures. The dry holes, however, acted as danger marks and signals by which the "breakers" were afterwards avoided to some extent. The result of the venture referred to was the opening of another district, of considerable magnitude, to the gaze of an astonished community. The market, which had begun to show signs of strength and improvement, gradually declined, but not until the second venture near Richburg, known as the Boyle well, came in with a flourish of trumpets, doing 250 barrels in twenty-four hours, did the crash come. This was the straw that broke the back of the beast, and a drop from 85 to 73 cents a barrel occurred in prices within three days; this transpired in the month of June. This latter well, however, soon settled down to fifty barrels per diem, and the oil being of an intensely dark color widely differing from that of the Richburg well, and of 39 degrees gravity, it began to be looked upon as of little importance to the trade. This view was effectually

established by the result of the third venture in that section, viz.: Knox Brothers' No. 1, which was located on a line between the two former and distant from Boyle's only sixty rods. The Knox well was watched at its completion by a large number of deeply interested oil operators, expecting every moment to witness demonstrations similar to those made by Boyle's gusher, which flowed largely without the use of a torpedo. To the astonishment of many, and the extreme disgust of a few, however, the Knox No. 1 passed into and through an inferior sand formation without scarcely a showing of oil. If the rush of operators to the field had been great for a few weeks previous to this event, the stampede and hurry of the same to shake off the dust of the field, when the result became known, was indeed very great. Nor did other ventures which followed soon after along the northern and western edges of the territory, notably the Harding well north and the Painter well at the southwest, have any beneficial effects upon matters in general in the district. But the drill kept at work, for while large forces withdrew altogether from the contest, at this stage of proceedings, and unexpected results, there were still a few who seemed willing to progress. "To the victors belong the spoils," and to many of those who "kept the faith" and fought the good fight to the end during the dark days which followed, came spoils of no mean pretentions.

Moreover, as faith grew weak in prospects of maintaining the daily yield of the country, even with the strongest support that Allegany and other districts could afford, values began again to improve. Speculators bought largely of production, and as a consequence a rapid appreciation took place, and on the 12th day of September oil was sold in the various Exchanges of the country at $1.00 a barrel. This caused intense excitement throughout petroleum circles, and many deceived themselves by believing that the source of supply was soon to become so completely exhausted as to fall far below the demands of trade. As soon as prices approached the dollar mark there were hundreds of business men who, when the market was 75 cents could not be prevailed upon under any circumstances to invest a dollar, now rushed into the arena, bought and were gored on the spot. A tumble occurred to 91 cents, and another reaction to 99 cents. Then the majority of dealers, as well as the great mass of producers, were actually persuaded into believing that the country had seen the last of what was termed "cheap oil"—that is, oil under a dollar a barrel. But this hope remained anchored but a short season. Developments in various localities began again to attract serious attention. The Warren (or middle) district, during the months named, was struggling hard for an important position in the mind of the oil trade, and with varied success. It, however, has surmounted many obstacles, and appears at this writing with greater ability than ever before. Its interests will be properly treated further along.

THE M'KEAN DISTRICT.

On another page of this issue of THE AGE will be found monthly reports of the stocks and production of this field, by J. C. McMullen, Compiler for the Committee of Producers. It shows a decline in production of 4,000 barrels a day from August 1st. This system assumes that by taking a correct measurement of the stocks at the wells on the first of each month, and comparing this with the runs from the same by the Pipe Lines, a fair approximation of the total yield can be reached. It is beyond question the most satisfactory scheme yet adopted by the producers to arrive at the true condition of affairs in the great centre of production. The decline, while not exceedingly large, is yet quite extensive, and unless checked must, in the near future, open the way for a large increase in other fields. It is hardly to be supposed that a check will be placed upon it during the present winter. Old wells will not undergo another process of resuscitation before the spring of '82 opens, and in the meantime drilling is not likely to be conducted on a scale even as great as indicated by the table of operations which we present in another place in this issue. Of course, the fact must be recognized all the while that there is a large area of medium or light territory yet to drill in this field. A careful computation puts it at 14,100 acres, distributed about as follows:

East Branch, Tuna Creek	1200 acres.
West Branch, Tuna Creek	1000 "
Quintuple tract and contiguous lands	1000 "
Big Shanty and vicinity	1500 "
Kinzua proper and Sugar Run	800 "
Kinzua, upper portion	900 "
Bingham estate	1200 "
Moody tract	1000 "
Indian and Meek's Creek	1800 "
Four Mile and vicinity	2200 "
Scattering sections	1500 "
	14100 acres.

This is a moderate estimate of the area, and does not take into consideration the many "locations" that are still remaining for wells in

those portions of the territory that appear to be thoroughly drilled. It will, therefore, be seen that, estimating one well to every four acres of land, there will yet be sunk in the Bradford or McKean district 3,525 wells. The character of the territory in each of the sections named is indicated to a fair extent by the results of the drill during the month of November, which will be found in the statement or table of operations on page 31. In the water sheds of the East and West Branches, new wells are not expected to yield more than ten or twelve barrels a day after the first few days, during which time they usually do much better than this, which is owing, of course, to the effects of heavy doses of glycerine; on the Quintuple tracts similar results are obtained. In both cases, however, there are exceptions to this rule, as an occasional new strike yields more than double this amount for months at a stretch. At Big Shanty, which is situated exactly seven miles south of Bradford and about 2 degrees east, the prolific belt—extending from the Summit through the Bingham and Moody tracts, via Aiken and Davis Switch southwestward—is encountered. Here the belt intersects the east branch of the Tuna, and crossing forms an angle, and proceeds in its course about one and a half miles to the southwest. While the territory to the northeast of Big Shanty has been very productive, that toward the south has only been medium, tending to very light, and finally at the point named to *dust* and salt water. At least this is the status at the present time. Whatever of value develops in the future contrary to this view, will be entirely new, and will be treated according to its merits. At this writing the probability of large extensions in that direction does not seem apparent.

It has remained a question of doubt and uncertainty for some months what the Kinzua and Sugar Run sections are liable to develop. Two wells are now producing in the Sugar Run section. They are located on Warrant 3,705, four miles northeast of the Vanscoy development on the Kinzua. They are small producers, from six to eight barrels, and yet they indicate something. The oil is of the amber grade, though of very good quality. The wells are situated four miles west and a few degrees south of the producing wells on the southwestern slope of the Quintuple tract, and the region between the points, it is supposed, has been thoroughly tested and found to be worthless. But it is frequently stated, and found to be almost correct, that where a five barrel well is obtained there is supply in the neighborhood for a ten. It is probable, however, that a conglomerate of uncertain dimensions and unsatisfactory proclivities extends from Sugar Run to Kinzua, a distance of four miles, and in spots along this bar small wells may occasionally be secured, together with as many failures. The line may even extend far beyond Kinzua to the southwest, possibly to Stoneham, Warren county. Its characteristics as a repository of crude are not very flattering. This is the only section of this field at present that appears undefined.

At Indian Creek and Four Mile on the east, the boundaries of the prolific area have been set for some time, though more recent developments have had a tendency to enlarge them somewhat. This, however, is not an unusual occurrence, as the extremes of all oil deposits have been found to be irregular and ragged as the shores of water courses with extensions of sand bars, which are sometimes quite productive. There appears to be a disposition on the part of operators in the Four Mile division to extend their conquests westward, over the head waters of Chipmunk Run. At the present time preparations are making for at least a dozen new wells in the latitude, some of which will have proper bearing upon the outer or western limits of the producing area in that uncertain region. It is known to a certainty that sand rock exists all the way through from Four Mile to Limestone, a distance of six miles, but the fact has also been established that salt water exists in profusion. But north of Four Mile, and east of Indian Creek, in the section intervening the Allegheny river and Olean, the utter absence of the oily conglomerate has been demonstrated quite satisfactorily, by the use of the ever certain drill.

During the month of November no new or startling developments occurred; 180 wells were completed in the field, five of which were failures. These were located as follows: Two on the West Branch, one in the Summit, Marion and Rixford section, and two on Sugar Run and Kinzua. About fifty wells were abandoned in the field during the month of November and about thirty in October. Many others have been partially deserted, being stripped of everything except a string of small pipe, which extends to a plug and is placed in the hole in order to shut the fresh water off the sand rock. The plug has a piece of pipe passed through it and arranged with a left hand thread, so that when the wells cease to yield this pipe can be detached without difficulty. It is estimated

that during the year approaching hundreds of the McKean county wells will undergo this treatment, bordering on abandonment.

ALLEGANY DISTRICT.

In this number of THE AGE will be seen a diagram of this field, which gives as correct an idea of its outline as it is possible to form at this time. The territory embraced within the boundary thus set amounts to 11,200 acres; but this is not all first-class territory by a considerable distance. The line has been marked to include all that appears as probable, and must therefore contain some that is entirely worthless. On the other hand, there is still the possibility that breaks will occur in this line at various points, and that a sufficient amount will be added to the total area to make up for any discrepancy entailed by the defects within. In the development of this field greater losses were incurred in sinking dry holes than in any other section or district of the State. Not less than $200,000 was expended before success seemed inevitable. This, however, was so widely distributed that the numerous defeats were harmless in their effects in a financial sense. One hundred and ten dusty pillars now mark the horizon of this deposit, and act as guides to future explorers for the liquid wealth the region has been demonstrated to contain. A history of the numerous experiments made, with a view to ascertaining the exact locality in which paying wells might be obtained, would require more space than can be afforded in this journal. It is perhaps enough for the trade to know, at this time, what the possibilities of the district are, and what the immediate future is liable to reveal. The reader, at his leisure, can peruse the table of contents of the diagram and satisfy himself regarding the dry holes and their effects upon the outlying territory. It will be observed the peculiar foot-shaped pool occupies a position, geographically considered, about ten miles directly east of Olean, N. Y., its latitude being northeast from the southeastern development of McKean county, Pa., and Cattaraugus county, N. Y. From this latter point to the toe of the foot, as seen in the diagram, it is just about nine miles by wind. The section intervening is pretty thoroughly tested, and has been declared void of all traces of the precious liquid. Salt water seems to exist in greater or less quantity at the level where oil was expected to be found, and the sand or conglomerate rock, which exists in some measure in all this region, is of a very inferior and shallow order. Taking the measure of this field, therefore, as indicated, we are enabled to make a fair estimate of the amount of oil producing territory it is supposed to contain. It is figured in the following manner:

Genesee Township.

Lot.	Acres.	Lot.	Acres.
30	180	29	20
22	75	31	15
24	200	16	360
15	150	8	360
7	25		

Clarksville Township.

Lot.	Acres.	Lot.	Acres.
17	200	9	250
1	250		

Wirt Township.

Lot.	Acres.	Lot.	Acres.
57	270	49	270
41	300	42	5
33	200	25	15
17	15		

Bolivar Township.

Lot.	Acres.	Lot.	Acres.
64	360	63	100
55	75	56	360
47	180	39	140
48	360	40	360
32	360	31	200
24	360	23	75
15	320	16	300
8	250	7	200
6	250	5	55

Alma Township.

Lot.	Acres.	Lot.	Acres.
1	50	2	50
3	75	4	250
20	360	19	360
18	360	17	200
21	360	22	360
23	150	40	360
39	360	38	100
144	240	143	100

Totals.

Alma	3,735
Bolivar	4,305
Wirt	1,075
Clarksville	700
Genesee	1,385
Grand Total	11,200

The richest portions of the field are found in lots 18 and 40, Alma; 32, 40, 48, 56 and 64, Bolivar; portions of 33, 41, 49 and 57 Wirt, and 8 and 16 Genesee. They do not cover the entire area of all these lots. These rich deposits are exceedingly limited as to area, but the wells that enter them are, as a general thing, very productive and durable. The daily yield of the district has been increased during the past three months to a degree exceeding all calculations of the most sanguine. On the first day of November the number of producing wells was 223. To this were added during that month 144, making a total of 370, whose aggregate yield is placed, upon a close calculation, at 5,100 barrels, an average of over 13 barrels to each well. This, however, is not surprising, as the extremely porous rock from which the supply is received is torpedoed very heavily. The largest wells

are located on lot 64 Bolivar, and in a limited space at the southwest corner of lot 49 Wirt and southeast corner of 57. Here wells have been obtained which have yielded 200 barrels a day for a couple of days after being torpedoed. They soon settle to 40 or 50 barrels, where they seem to hold at some length. While these richer portions are being drilled with satisfactory results, other or lighter sections must not be lost sight of. The great bulk of the territory must be placed in the category of that which yields but 10 or 12 barrels a day to a well, and much less with age. It is true the oil bearing sand formation is tolerably well distributed; that is, it is found in some degree everywhere under the area indicated by the diagram. But in no other field yet discovered has it been found to be so astonishingly changeable in character and surpassingly disappointing in the quantity of the precious liquid it contains; for, sometimes, when a large well seems to be a foregone conclusion from the erection of the derrick, a very small producer is obtained. Again, when a well of medium capacity is expected, a "gusher" results. This indicates an uneven (unfinished) broken formation that may be very productive in spots, and nearly void of the liquid in other places. There appears to exist a double strata, with a stratum of slate between, in some localities, while in others the sand is complete and of fine texture all through. Another peculiarity of the formation is the fact that in some instances oil in paying quantities is found in the upper stratum and but little or none in the lower, and *vice versa*. This has been found in the case of two wells sunk within 400 feet of each other. The question, therefore, of "duration" should form an important part in the calculation of Allegany's future production. Do the evidences above adduced warrant the assertion that long life is guaranteed the wells of that field? The answer would appear to take the negative side. The area of prolific territory is certainly quite limited, and as this will be drilled speedily and excessively, the rich supply must very soon become tolerably well exhausted. Meanwhile the daily yield must largely increase, for a short time at least, as nearly all the drilling that is being done throughout the field is upon the territory described by the belt line of the diagram. But large blocks of this, however, have been proven to be of such little value that, in numerous instances, projected wells have been abandoned. This is particularly true of the section lying between Allentown or Alma on the east and lot 32 Bolivar, where a heavy gas deposit has been discovered. The expanse of producing areas is, therefore, so insignificant when contrasted with the enormous boundaries of the McKean field, which includes a range of 65,000 acres, that it seems like comparing a mill-pond to one of our great Northern lakes. And, so far as the quantity of crude that each is destined to furnish the world, the similitude is about the same. The remarkable growth of developments in Allegany has been, and is still, the subject of much discussion in oil marts. Prior to April first of the present year there were but 24 wells producing. During April we have record of the completion of three wells. The results of these were not such as warranted enormous outlays of money in developing the region, and it was left for May to reveal something of a spurring character. On the 6th day of that month the Richburg well, above referred to, made its bow to the public. After that date there was no time lost in drilling wells, and hereto is attached a list of the number completed during each month from April to December:

April	3
May	4
June	14
July	22
August	53
September	63
October	96
November	154
Total	406
Of this number there were dry holes	60
Leaving as producing wells	346
Wells producing prior to April 1st	24
Total producing December 1st	370

A fair estimate places the average yield at 14 barrels per well, giving a total on the first of December of 5,180 barrels. For what may be expected in the immediate future in that field, the reader is referred to the table of operations.

WARREN OR MIDDLE DISTRICT.

This field has occupied the serious attention of the trade for more than a year. Prior to that time operations were conducted on a moderate scale. For six years previously oil had been produced in the vicinity of Stoneham, but in exceedingly light quantity. The first well was sunk during the excitement consequent upon the results of the drill at Glade and North Warren, the former being situated just across the Allegheny River from the village of Warren proper. The discovery of oil in paying quantities in that section was made by David Bently, Esq., who drilled the test well upon the lot on which his dwelling house

stood. After that date the excitement became intense, and operations were pursued northward with astonishing dispatch. Then came the rush in the village of North Warren, the location of the great state asylum for the insane, where, strange to state, an oil man has not yet anchored for life. The village is situated about two miles north of Warren. The oil discovered here was of the shale production, and was obtained in various strata, at various depths, usually from 400 to 500 feet on the low lands. The Conewango Creek intersects the Allegheny River a short distance below the village, and passes through the valley upon which the town is built. Some of the wells when completed started off at an astounding rate, putting in tank from 200 to 500 barrels a day. This class was not the rule, however, but the disgusting exception. These outlets served as an incentive to speculators, and wells were drilled on every available space the town afforded. As a result, while half a dozen deposited money and received it in return with usury, fifty others lost all they invested. The wells in nearly every instance declined to a degree next to nothing, and in a very short time the village had settled back in horror to its ancient order, and its oil business was a thing of the past. A few wells continued to produce oil in paying quantities out of the vast numbers that were sunk, and those few are still yielding. On the 22d of November last Jameson & Co., of Warren, into whose hands one of these "stayers" had fallen, conceived the idea of drilling the well deeper, in hope of benefitting or increasing its production. As a result, after penetrating the shales to the depth of thirty-five or forty feet below, the well began to flow largely, and actually yielded about 650 barrels of oil during the twenty-four hours succeeding. While the character of the territory was thoroughly understood by the trade, yet the well answered the purpose of the bear element for the time being, and the market dropped a few cents a barrel. In less than forty hours after the first flow, however, it ceased to pulsate altogether. and has not yet been improved except to a degree somewhat above its original capacity. It has excited no particular stir, and may not be the cause of the drilling of a fresh well in the section.

At Clarendon, in the Stoneham field, however, there is some activity. Clarendon is situated about six miles south east of Warren village, and the territory proven productive in the section, consists of about four thousand five hundred acres, the better portions of which seem now to have been drilled pretty thoroughly. This section alone has 230 producing wells, which average about six barrels each. During the past three months sixty-eight of these were sunk. The wells, as a rule start off, after being shot with glycerine, at the rate of fifty and sixty barrels a day, but soon settle to the ordinary size of young producers. A large share of the territory embraced in the area above mentioned is extremely light, and will hardly warrant the outlay necessary to operate it at present prices for oil—85 cents. For this cause it is presumed the drill has not been urged with that haste that it otherwise would. In this field there are two Pipe Lines contesting for patronage—the United and the Union. The latter is the property of the Union Oil Company, a wealthy corporation, whose principal busines is producing oil. The production is about equally divided between them, and no oil is permirted to waste. During the month of November there was nothing of importance developed in the field, though the spirit of the wild cat class does not seem to possess a large force of the operating fraternity.

Some attempts have recently been made to open a field at Youngsville, 12 miles north of Warren. Two wells have been sunk, one of which is producing about one barrel of oil per day. An oil formation similar to that of the Clarendon section is found though not of as promising characteristics. Other tests are to be made in the latitude immediately, but whether they are to be crowned with the fate of their predecessors or with success, is, of course, entirely a matter of speculation and theory.

In the Warren district during the month of November 31 wells were completed, yielding 372 barrels, an average each of 12. No important test wells were sunk in the Clarendon section, and no additions of exceptional value were made during that period to the producing area; that remains about as developed three months ago.

SHEFFIELD

is situated six miles south of Clarendon, 35 degrees east. Between the points numerous tests have been made, demonstrating pretty thoroughly that oil in paying quantities does not exist beneath the entire surface. An immense gas deposit, however, has been developed in a sand rock found at the same level of the oil

rock of Clarendon. The fact, therefore, that these several formations of conglomerate tendencies exist throughout the region, suggests the possibility of the future discovery of occasional pools of oil. The character of the "oil measures" throughout the entire region is such that a well may be sunk in close proximity to a rich deposit of oil and yet fail of success. Just why this is so is not apparent, as there would appear to be a relation existing between the Stoneham strata and those of the Tidioute section, fourteen miles west. The latter is the most perfect, and yet compact, oil formation ever discovered. It is also the deepest, being about 100 feet thick in the centre, and gradually thinning toward the edges. No dry holes were obtained in this rock. All of the wells yielded more or less oil, and in some instances the supply was equal to 400 barrels a day. As the Stoneham sands seem to agree with those of Tidioute, it would appear proper to ascribe to them an unfinished or "incomplete" character. Wherever these formations exist, there will be a possibility of opening fresh and unexpected sources of supply. As yet, however, there has been nothing discovered in Warren county, outside of the Tidioute section, calculated to cause apprehensions of the discovery of immense and dangerous deposits of oil. A rock which is irregular in formation and "habit," is seldom, if ever, found to contain large bodies of any liquid or mineral product. This Warren county rock is irregular, incomplete and quite uncertain, even in close proximity to successful developments. East of Tidioute it was lost sight of, but south of that village, and on the east side of the river, the Economite Company succeeded in tapping a small deposit in 1868. From that time until the development of Stoneham in 1880, nothing occurred in the county to attract the attention of the oil trade. Test wells were sunk in various localities during the interim, and it was believed by a few, even years before the Stoneham excitement, that there were deposits of oil in the county not yet revealed to the world. These prognostications are now being realized to some extent. Last year the striking of the Blue Jay well in Forest county, at Foxburg, near the Warren county line, which produced oil at the rate of ten barrels a day, was an incentive to wild-catters, and the result was the opening of a new field three miles southeast of Sheffield, known as the Magee & Horton section. Here a well was obtained of the forty barrel stripe, and around it were sunk half a dozen others, some of which were totally dry, while none of the others equalled it in capacity. About the 26th of November last another venture, known as the Emery & Shank well, was struck, one mile southwest of Magee & Horton's. It is located on lot 438, and possesses characteristics very similar to those of the latter's No. 1. It opens another of those little pools with which it would appear the county, as well perhaps as portions of Forest county, seem to abound. The fortunate developer hits these rich spots, while he who was born under difficulties misses fire every time. Similar results, therefore, are perhaps what may be expected in the future from developments in Warren county.

SUPPLY AND DEMAND.

The question of supply and demand is one in which all people engaged in the petroleum trade, either directly or indirectly, become deeply interested. The business has grown so rapidly, the fluctuations in the home and foreign demand have been so great, and the sources of supply have been so irregular and uncertain, that all attempts at calculating the future condition of the trade, have failed as signally as the prognostications of all false prophets. In regard, however, to the position of consumption in foreign countries as well as at home, the trade must be guided by the demands that arise from year to year. During 1880 the foreign call was lighter than for the year previous. But the year 1881 seems to be making up fully for all *discrepancies* of '80. A mistaken idea prevails whenever the foreign demand declines, to the effect that the market is glutted and that a check is liable to be placed upon the uses of the article, &c., &c. Stocks in foreign ports may be large at this date, and in three months hence be almost entirely stripped, as dealers are governed entirely by the calls that come from the interior. These are very irregular, and exporters are careful not to hold immense quantities any great length of time. Prior to the development of the Northern field many of them, who had bought largely for future use, got badly left, as their stocks cost them nearly double what they could have been procured at after the Northern field *freshet*. But during all the years there appears to be a general ratio of increase in the demand for our valuable product, and should it continue for the five years to come as for the five years past, it will require 90,000 barrels a day to satisfy the demands of the world. Doubtless this amount will be produced when it is found

necessary that it should be. The following table shows the relative position of the export business during the eleven months of 1880 and 1881:

Exports of Refined, Crude and Naptha, from all Ports, January 1 to November 30.

	1881. Gallons.	1880. Gallons.
From Boston	10,115,371	4,553,329
Philadelphia	96,956,609	51,168,825
Baltimore	17,133,948	15,097,318
Richmond	215,484	1,302,064
Total	124,421,412	72,121,537
From New York	329,914,948	237,076,634
All ports	6,819,920	4,694,380
Total exports from U. S.	462,156,280	313,897,551
Difference in favor of 1881		148,258,729

Reduced to barrels of forty-two gallons each, the statement would be as follows:

	Barrels.
Eleven months of 1880, average per day	22,378
" " " 1881, " " "	32,952
Increase in 1881, average per day	18,574

At this ratio of increase, which is over thirty-three per cent., it would require but a few years for foreign countries to absorb all this country produces. In our next we will furnish some facts and figures regarding the home as well as foreign consumption. At present there is quite a lively interest manifested, and the outlook in this direction is extremely encouraging.

ALLEGANY STOCKS.

The stocks in the Allegany field were computed on the first of November, and again on the first of December. The following table shows the result:

	Stocks Nov. 1.	Stocks Dec. 1.
In wooden tanks	38,000	84,666
In iron tanks	108,891	142,216
Totals	146,891	226,882
Increase in November		79,991

	Barrels.
The United Lines shipped from the region during the same time	42,500
Lost and burned	12,000
Add increase of stocks	79,991
Total	134,491
Daily average	4,483

To this should be added the production of the new wells completed during the latter portion of the month, which would bring Allegany's yield to 5,180 barrels daily.

STOCKS IN FOREIGN PORTS.

Guttentag's latest circular, published at Hamburg on the 8th ult., shows that the stocks in North European ports on the 7th ult. were 850,814 barrels, against 1,128,338 barrels a year ago, and that the total of oil in stock, afloat and loading on the 1st of October for all the North European ports, including London, was 1,771,205 barrels, against 1,873,109 barrels on October 1, 1880. In view of the fact that the total export from America to Europe from January 1 to September 23, 1881, was 291,952,936 gallons, against 202,696,442 gallons for the same period of 1880, or nearly fifty per cent. greater, it would appear almost self-evident that the consumption abroad has increased at a rate corresponding. For instance, if the exportation to Europe had been less this year than last, a decrease in foreign stocks might reasonably be expected, but with an increase of nearly one-half in the exportation, we still find a decline in the amount of stocks from last year, it speaks volumes for the growing demand for our product abroad.

RUNS, DELIVERIES, STOCKS.

TABLES SHOWING THE NOVEMBER PIPE LINE RUNS AND SHIPMENTS, WITH STOCKS ON DEC. 1ST.

Pipe Runs.

District.	Pipe.	Barrels.
Bradford	United	1,734,101.33
Tidioute and Titusville	"	32,105 43
Lower Country	"	212,528.99
Warren	"	17,958.76
Monongahela	"	200.87
Total		1,996,895.38
Bradford	Tidewater	242,224.22
Warren	Union Oil Co	26,649.46
Titusville	Octave Oil Co	4,515.92
Oil City	Charley Run	250,00
Shaffer	Shaffer Run	425.00
Franklin	Franklin Pipe (est)	6,200.00
Total all Lines		2,277,159 98
Average per day		75,905.33

Deliveries.

District.	Pipe.	Barrels.
All Points	United	1,752,562.86
Warren	Union Oil Co	16,110.50
Titusville	Octave	3,498,92
Franklin	Franklin Pipe (est)	6,200.00
Shaffer	Shaffer Run (est)	225.00
Oil City	Charley Run	250.00
Bradford	Tidewater	245,363,65
Total deliveries		2,024,210.93
Total Runs		2,277,159 98
Amount of Runs in excess of Shipment		252,949.05
Deduct waste		341.17
		252,597 88

Stocks December 1st.

District.	Pipe.	Barrels.
Oil City	Charley Run	3,007.00
Bradford	Tidewater	2,157,616.06
All Districts	United	22,686,041.08
Shaffer	Shaffer Run	25,103.10
Warren	Union Oil Co	54,367.66
Titusville	Octave Oil Co	8,602.13
Franklin	Franklin Pipe	13,250.10
Total November		24,947,987.13
" October		24,695,389.25
Difference in favor of November		252,597.88
Deduct sediment		2,000.00
Total increase of stocks		250,597.88
Average increase per day		8,353.26

NOVEMBER STATISTICS.

TABLE SHOWING PIPE RUNS, SHIPMENTS AND CHARTERS FOR NOVEMBER.

Day.	Total Runs	Bradfo'd Runs	Total Shipments	Bradfo'd Shipments	Charters
1	85,484	71,934	76,850	48,462	37,000
2	74,981	66,081	78,558	46,488	18,700
3	80,408	71,258	72,052	54,054	21,800
4	76,416	67,266	58,662	39,515	35,700
5 and 6	94,625	83,775	105,227	71,483	35,700
7	90,153	80,403	71,086	39,458	00,000
8	69,111	60,851	57,727	36,080	46,000
9	81,780	72,830	73,966	42,170	51,200
10	114,451	103,551	72,200	52,113	83,300
11	87,949	77,399	78,246	51,215	94,100
12 and 13	103,295	95,545	109,966	76,377	27,900
14	90,605	80,205	64,306	42,833	13,500
15	79,930	68,730	85,081	41,279	47,300
16	76,266	66,816	57,842	40,918	99,800
17	71,201	62,551	68,791	43,583	38,500
18	75,180	65,180	63,691	41,539	52,700
19 and 20	100,119	91,019	126,406	81,566	36,000
21	77,380	67,130	62,683	50,593	49,200
22	76,197	66,797	64,844	45,650	55,700
23	69,849	60,399	82,758	46,696	28,600
24	58,599	53,449	72,699	53,718	00,000
25	59,660	52,160	72,633	47,956	58,600
26 and 27	118,164	109,814	120,106	85,030	55,200
28	95,711	81,811	80,753	51,393	9,500
29	108,531	94,331	64,066	41,066	62,100
30	124,384	107,884	64,303	45,516	20,000
Averages—					
December	69,688	59,948	41,713	26,515	19,953
January	65,457	54,962	33,748	20,422	19,502
February	70,771	61,175	32,328	21,527	31,046
March	76,849	66,857	39,983	30,203	29,190
April	80,112	69,857	44,557	31,637	32,023
May	82,850	73,053	49,333	36,028	52,981
June	87,716	77,593	55,076	37,178	50,483
July	86,063	68,381	62,015	41,403	64,507
August	90,442	80,838	70,979	46,288	45,500
September	82,738	73,534	70,517	44,403	61,883
October	86,758	75,896	65,762	43,869	31,881
November	74,637	65,877	66,531	44,017	33,200

HEAVY OIL.

THE GREENSBURG FIELD.

ATTRACTING some attention during the latter part of summer and the early fall months, this oil field is located about five miles from Greensburg in a southeasterly direction on what is known as the Dr. Brinker Farm. As early as 1848 oil was found on this farm while boring for salt wells. Of course, at that early day, the use and value of the article was unknown. The salt-seekers left the territory in disgust. In 1865 four wells were drilled, which proved valueless. Again in 1872 Col. Ege, of this city, and others, drilled three wells on the south end of the farm, but got nothing for their money. A sand about 20 feet in thickness was found that was thought to be of very good quality. The present operations are about half a mile down the valley from the old operations. The principal operators at present are Scott Bros. & Co., Barker & Nesbit, John Robinson, Clopper & Steck, Painter, and George Rumbaugh. The Scott well No. 1 was completed on July 7th, and produced an average of twenty-five barrels a day for about a week. Water began to manifest itself then, and the casing was drawn and replaced, but the trouble was not overcome. The Brinker and other wells drilled in 1865 were never plugged, and it is generally supposed the water came from that source and flooded the territory. The oil is a beautiful amber in color and makes a very superior lubricant. It is of 24° gravity, and cannot be chilled with an ice chest. The discovery of oil in that neighborhood has caused much excitement among the farmers. An idea of the interest in the oil development may be formed from the fact that within a radius of several miles the territory has been leased. William Johnson has 800 acres and Scott Bros. & Co: 1,000. The land is leased at one-fourth royalty; $1,000 an acre has been paid in some instances. Whether the field will prove a paying one remains to be seen. The various tests now going down may determine that fact. The heavy oil industry should be developed as there is little danger of over-doing it, as is unfortunately the case with our light oil fields.

THE MUSKINGUM, O., VALLEY.

In 1866, when almost every portion of the country was drilled for oil, the Muskingum Valley was developed with some success. At that time every one thought of illuminating oil, and had no idea that a mineral lubricating oil could be of any use. After it was ascertained to a certainty that oil was to be had for the drilling, refineries were started which resulted in failure, as the product was too heavy to refine. The territory was abandoned, until last year it was decided to renew active operations. The oil produced there is of a superior heavy quality, readily selling in market at $16 to $20 a barrel. The producing district is about eighteen miles from Zanesville, near the little landing on the Muskingum River known as Blue Rock, or Gaysport.

THE *Hub* Publishing Company, of New York, recently wrote a Bradford firm as follows: "Dear Sir—In making up our directory of the carriage and accessory trades, we find that you make bull wheels. Pray what are these? A reply by mail will oblige us." The members of the firm could not restrain their risibilities when they read the above. It would be a very difficult thing to drill an oil well without bull wheels, but they certainly would not make a handsome set of wheels for a carriage.

REFINED MARKET.

TABLE SHOWING OFFICIAL QUOTATIONS OF THE REFINED MARKET FOR NOVEMBER.

DAY OF MONTH.	New York ----	Philadelphia---	Baltimore -----	London and Liverpool ---	Bremen ------	Antwerp -----
	Cts	Cts	Cts	Pence.	Mks	Fcs.
1	7⅝	7½	7½	6⅜@ 6½	7 50	19⅛
2	7⅝	7½	7½	6⅜@ 6½	7 50	19
3	7½	7⅜	7⅜	6¼@ 6½	7 50	19
4	7½	7⅜	7⅜	6¼@ 6½	7 55	18¾
5	7½	7⅜	7⅜	6¼@ 6½	7 55	18¾
6	---	---	---	---	---	---
7	7½	7⅜	7⅜	6¼@ 6½	7 50	18⅜
8	7½	7⅜	7⅜	6¼@ 6½	7 45	18⅜
9	7½	7⅜	7⅜	6¼@ 6½	7 45	18¼
10	7½	7⅜	7⅜	6¼@ 6½	7 45	18⅜
11	7½	7⅜	7⅜	6¼@ 6⅜	7 45	18⅜
12	7½	7⅜	7⅜	6¼@ 6⅜	7 45	18¼
13	---	---	---	---	---	---
14	7½	7¼	7¼	6¼@ 6⅛	7 45	18⅛
15	7½	7¼	7-*	6¼@ ---	7 45	18¼
16	7½	7¼	7¼	6⅛@ 6¼	7 35	18
17	7½	7¼	7¼	6⅛@ 6¼	7 40	18
18	7½	7¼	7¼	6⅛@ 6¼	7 40	18
19	7½	7¼	7¼	6⅛@ 6¼	7 35	18
20	---	---	---	---	---	---
21	7½	7⅛	7¼	6⅛@ 6¼	7 30	18⅛
22	7½	7⅛	7¼	6⅛@ 6¼	7 30	17⅞
23	7½	7⅛	7¼	6⅛@	7 25	17⅞
24	---	---	---	6⅛@ 6¼	7 15	18⅛
25	7¼	7⅛	7¼	6⅛@	7 15	18¼
26	7¼	7⅛	7¼	6⅛@	7 15	18⅜
27	---	---	---	---	---	---
28	7¼	7⅛	7¼	6⅛@	7 15	18⅜
29	7¼	7⅛	7¼	6 @ 6½	7 15	18¼
30	7¼	7⅛	7¼	6 @	7 10	18⅛

SECOND-HAND STEAM ENGINES.

IN buying second-hand steam engines, says the *Mechaniaal Engineer*, the cylinder and steam-chest covers should be taken off and the parts examined to see if they are in proper condition. The cylinder may require re-boring to make it true and smooth, and the expense of this job should be taken into account in estimating the value. The valve-face may require refitting, and the valve also, and this must be taken into account. The bearings must be examined to see if the brasses are not entirely worn out and backed up with "shims" so as to make them answer the purpose. The bed-plate must be looked at to see if their threads are not stripped or worn out. Whatever heater is used on the engine, it must be thoroughly overhauled to ascertain the condition of its tubes. In many cases they are nearly rusted out, particularly if the engine has been standing some time without use. The feed-pump will also bear inspection as to its valves and the condition of them. All the valves will need examination for the condition of their seats.

"OLD KAINTUCK."

NOT many years ago Kentucky was looked upon as a promising oil field. Wonderful stories were told of its rich deposits of petroleum, and the tales published were as much exaggerated as any ever told outside the oil regions. A well was struck in Cumberland county, in 1868, that produced some heavy oil. Another well was added to the number of producers, and a shipment of 174 barrels was made to New York. This shipment of oil was the incentive which caused an organizer of a stock company to interest sufficient capital so that there was some money made by him out of the speculation. Judge Bolles, a land speculator of Glasgow. Ky., was far-sighted enough to lease large tracts of land, which he sold to the New Yorkers, clearing over $100,000 for himself. Afterwards a 40-barrel well was found in Baron county. The well was shallow, and got its oil in a shale. It was a very light oil, one of the vilest smelling compounds that ever disgusted the nostrils outside of a tanyard, It could not be refined, which was of little consequence anyhow, as the source of supply was very soon exhausted. Last year the New York and Southwestern Petroleum Company drilled several wells in Pulaski county for heavy oil, but met with little success, J. O. Marshall, a lower country lawyer and producer, but latterly of this city, had charge of the field operations of the New Yorkers. The Kentucky field, while it is not entirely and forever abandoned, is of very little consequence to the trade as a producing factor. The only two wells that ever produced oil in any quantity in Kentucky were the Crocus and Sherman. Mr. Sherman is contented with the Bradford field now, and the land of the Blue Grass section has no allurements for him.

PETROLEUM AS A MOTIVE POWER.

AN ingenious contrivance for utilizing petroleum as a motive power has recently been brought forward in the shape of a gas cyclinder and air pump placed longitudinally side by side and connected to the same crank shaft. The power is originated by the combustion of petroleum oil in the gas cylinder, which is supplied with air from a receiver, in which it is kept at the desired pressure through the agency of the air pump, the speed of the engine being increased or diminished by graduating the quantity of air introduced into the gas cylinder from the air tank. The engine makes about

three hundred revolutions a minute, and the main or gas cylinder is kept cool by water, which circulates up through one piston rod and piston head, passing out through the other piston rod. The marine application of this motor is interesting. The engine always moves in the same direction, whether the boat is going ahead or backing, the motion of the screw being governed by two cog wheels, one of which it drives forward and the other backward—these being controlled by friction clutches, which are operated by air pressure from the tank.

A "PECULIAR" OIL COMPANY.

THERE is a regularly organized Oil Company, whose headquarters is in New York city, that has been acquiring a large amount of property through the oil country for some time past. The business is transacted so secretly that publication is seldom made of transfers. The manner adopted by the company, too, is somewhat peculiar; and yet, events prove that it is quite a success. An operator who possesses productive property is approached upon the subject of disposing of it. He may not wish to sell, but at the same time may desire the use of a certain sum of money in order to complete enterprises he may have on foot. In that case he is furnished money, and as security turns his property into the organization as so much stock. He remains on the premises in charge of his possessions, and matters move along as if nothing had occurred. When the original owner desires it, his property will be purchased and paid for in cash at their full value, or he may remain in the company as a stockholder for all time. Numerous transactions have recently occurred on these terms here in the McKean field. Reports are to the effect that the company is composed of a large number of the wealthiest capitalists of the East, as well as a number throughout the oil regions.

THE Union Oil Company is laying a three-inch oil pipe line, and taking up its two-inch line, through the Clarendon field. The same Company is also building a third 30,000 barrel iron tank in the same district.

THERE are no pumping wells or dry holes in the Clarendon district. The average depth on the flats is 1,000 feet, and, according to the altitude, it varies on the hill sides. The wells start at about thirty barrels and settle down to fifteen.

SALES.

TABLE SHOWING SALES OF OIL AT THE VARIOUS EXCHANGES OF THE COUNTRY.

	Bradford.	Pittsburg.	Oil City.
1	793,000	578,000	1,133,000
2	835,000	368,000	1,474,000
3	454,000	288,000	1,079,000
4	1,031,000	491,000	1,110,000
5	1,030,000	285,000	604,000
6	------	------	------
7	948,000	178,000	684,000
8	131,000	130,000	593,000
9	553,000	304,000	762,000
10	777,000	291,000	998,000
11	564,000	210,000	584,000
12	411,000	257,000	584,000
13	------	------	------
14	379,000	186,000	522,000
15	475,000	166,000	672,000
16	554,000	263,000	698,000
17	896,000	294,000	1,112,000
18	1,241,000	403,000	1,134,000
19	513,000	238,000	774,000
20	------	------	------
21	477,000	313,000	1,024,000
22	573,000	248,000	1,084,000
23	1,605,000	598,000	1,300,000
24	Holiday	Holiday	Holiday
25	1,003,000	260,000	1,022,000
26	545,000	155,000	623,000
27	------	------	------
28	663,000	603,000	1,320,000
29	930,000	386,000	1,278,000
30	1,558,000	605,000	1,474,000
TOTALS:			
November	17,939,000	8,998,000	236,22,000
October	10,129,000	7,399,000	19,643,000
September	25,023,000	12,251,000	20,000,000
August	13,406,000	6,733,006	18,187,000
July	8,183,000	4,935,000	15,730,000
June	4,889,000	3,848,000	10,452,000
May	5,150,000	3,968,000	12,221,000
April	9,792,000	4,753,080	17,209,000
March	6,999,000	5,717,000	16,872,000
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REMERCIMENTS.

WE present in this (the first) number of our magazine a review of "The Real Estate Market," from the gifted pen of T. B. Hoover, of the Petroleum Real Estate Company. Mr. H. is probably the best posted man in the oil regions on the subject, and no one will question any statement made by him.

The article in this issue entitled "Petroleum as a Fuel," is from the pen of Amanda T. Jones, a woman of talent as well as genius. She is thoroughly conversant with the art of utilizing petroleum in the manner referred to, as she herself has invented an appliance and has reduced the practice to a science, the most complete and perfect known. The article will be read with great interest, and its suggestions may be of value in more ways than one. Her individuality throughout the article does not appear, but her unselfishness could not be overlooked by the editors.

PETROLEUM EXPORTS FROM 1864 TO 1880, INCLUSIVE.

THE quantity of Petroleum and the quantity and value of Petroleum Products exported from the United States, during each of the fiscal years from 1864 to 1880, inclusive, as reported by the Bureau of Statistics, are as follows:

Year ended June 30.	EXPORTS.											
	Mineral, crude (including all natural oils without regard to gravity.		Mineral, Refined or Manufactured.						Residuum (tar, pitch, and all other from which the light bodies have been distilled.)		TOTAL.	
			Naphtha, benzine, gasoline, &c.		Illuminating.		Lubricating (heavy paraffine, &c.)					
	Gallons.	Dollars.	Gallons.	Dollars.	Gallons	Dollars.	Galls.	Dols.	Galls. *a*	Dols.	Gallons.	Dollars.
1864	9980654	3864187	438197	154191	12791518	6764411	.....	.....	.....	.....	23210369	10782689
1865	12293896	6868513	480947	173943	12722005	9520957	.....	.....	.....	.....	25496849	16563413
1866	16057943	6015921	673477	188825	34255921	18626141	.....	.....	.....	.....	50987341	24830887
1867	7344248	1864001	224576	34175	62686687	22[illegible]9466	.....	.....	.....	.....	70255481	24407642
1868	10029659	1564933	1517268	167873	67909961	19977870	.....	.....	.....	.....	79456888	21816676
1869	13425566	2994404	2673094	445770	84403492	27630137	*b*134532	51122	.....	.....	100636684	31127433
1870	10403314	2237292	5422604	564864	97902505	29864193	*b*6871	2611	.....	.....	113735294	32668960
1871	9859038	1971847	7209592	746797	132608955	34138736	*b*59632	22660	155474	14770	149892691	36894810
1872	13599768	2307111	8092635	932160	122539575	30566108	541419	211287	438186	41724	145171583	34058390
1873	18439407	3010050	9743593	1487439	158102414	37195735	748699	277966	781074	79566	187815187	42056756
1874	17776419	2099696	9737457	1038622	217220504	37560995	1244305	404244	1827798	142299	247806483	51254815
1875	14718114	1406018	11758940	1141440	191551933	27030361	1173473	313656	2752848	187103	221955309	30073568
1876	20520397	2220268	14780236	1442811	204814673	28755638	963442	303863	2581404	193206	243660152	32519786
1877	26819202	3756729	15140183	1816682	262441844	55401132	1601065	497540	3196620	317355	309198914	61789438
1878	27936727	2694018	16416621	1411812	289214541	41513676	2304624	639381	3968790	316087	358841303	46574974
1879	25874488	2180413	15054361	1258780	331586442	35999862	2487681	655468	3307038	210726	378310010	40305249
1880	28297997	1927207	18411044	1192229	367325823	31783575	5162835	1039124	4967000	276490	423964699	36218625

As a given number of gallons of refined petroleum represents the product of a larger number of gallons of crude petroleum, it is necessary to reduce the exports of petroleum to their equivalent in crude oil, in order to arrive at a knowledge of the percentage of the total product of mineral oil exported. It has been ascertained as a result of a careful computation, that the quantity of petroleum and its distilled products exported during the year ended June 30, 1878, was equivalent to 407.482.175 gallons of crude oil; or, in other words, that the exports of petroleum constituted about 66 per cent. of the production. A larger percentage of the mineral oil product of the country is exported than of any other product except cotton.

a Barrels reduced to gallons at the rate of 42 gallons to the barrel. *b* Estimated.

CERTIFICATE MARKET.

MONTHLY AND YEARLY AVERAGE PRICE OF PIPE LINE CERTIFICATES OF CRUDE OIL IN THE FOLLOWING YEARS:

A. D.	Jan.	Feb.	March	April	May	June	July	Aug.	Sept.	Oct	Nov.	D'cmb'r	Yearly
	Ave'age	Ave'age	Ave'age	Ave'age	Ave'age	Ave'age	Ave'age	Ave'age	Ave'age	Ave'age	Ave'age	Ave'age	Av'ge's
1859									20 00	20 00	20 00	20 00	20 00
1860	19 25	18 00	12 62½	11 00	10 00	9 50	8 62½	7 50	6 62½	5 50	3 75	2 75	9 60
1861	1 00	1 00	1 00	62½	50	50	50	25	20	10	10	10	49
1862	10	15	22½	50	85	1 00	1 25	1 25	1 25	1 75	2 00	2 25	1 05
1863	2 25	2 50	2 62½	2 87½	2 87½	3 00	3 25	3 37½	3 50	3 75	3 85	3 95	3 15
1864	4 00	4 37½	5 50	6 56	6 87½	9 50	12 12½	10 12½	8 87½	7 75	10 00	11 00	9 87½
1865	8 25	7 50	6 00	6 00	7 37½	5 62½	5 12½	4 62½	6 75	8 12½	7 25	6 50	6 59
1866	4 50	4 40	3 75	3 95	4 50	3 87½	3 00	3 75	4 50	3 39	3 10	2 12½	3 74
1867	1 87½	1 85	1 75	2 07½	2 35	1 90	2 62½	3 15	3 40	3 55	2 50	1 87½	2 41
1868	1 95	2 00	2 55	2 82	3 75	4 50	5 12½	4 57½	4 00	4 12½	3 75	4 35	3 62½
1869	5 75	6 95	6 00	5 70½	5 35	4 95	5 37½	5 57½	5 50	5 50	5 80	5 12½	5 63¾
1870	4 52½	4 52½	4 45	4 22½	4 40	4 17½	3 77½	3 15	3 25	3 27½	3 22½	3 40	3 89
1871	3 82½	4 38	4 25	4 01	4 60	3 85½	4 79	4 66	4 65	4 82½	4 25	4 00	4 34
1872	4 92½	3 80	3 72½	3 52½	3 80	3 85	3 80	3 58½	3 25	3 15	3 83½	3 32½	3 64
1873	2 60	2 20	2 12½	2 30	2 47½	2 22½	2 00	1 42½	1 15	1 20	1 25	1 00	1 83
1874	1 20	1 40	1 60	1 90	1 62½	1 32½	1 02½	95	95	85	55	61½	1 17
1875	1 03	1 52½	1 75	1 36½	1 40	1 26½	1 09	1 13	1 33	1 32½	1 44	1 55	1 35
1876	1 80	2 00	2 01	2 02¼	1 90½	2 01¾	2 24½	2 71	3 81	3 37½	3 11	3 73	2 56¼
1877	3 53¼	2 70	2 67½	2 58	2 24	1 94⅜	2 07½	2 51	2 38	2 56¾	1 91	1 80	2 42
1878	1 43	1 65¼	1 59	1 37½	1 35¼	1 14	98¾	1 01⅜	86½	82½	89⅜	1 16	1 19
1879	1 03	98	86¼	78½	76	68⅜	69⅞	67⅛	69½	88½	1 05⅝	1 18⅛	85⅞
1880	1 10¼	1 03⅛	88¾	78	80	1 00	1 06¼	91	96	96⅞	91⅞	91⅝	94½
1881	95½	90⅜	83⅜	86¾	81⅞	81¼	76⅞	1 78⅛	97 3–16	94¾	84		

REPORT
OF
OIL OPERATIONS FOR NOVEMBER

Allegany Field.

WELLS DRILLING.

WIRT.

Lot 17, Anderson & Gamble 800
17, Taylor & Co. 700
17, " ..... rig
17, Koch Bros ..... rig
17, W. B. Reeder 200
17, John Bryan ..... rig
55, Fertig Bros 500
25, Briody & Barnsdale 300
33, Jack McLeod ..... rig
33, " 300
33, Allen & Taylor, No. 6 ..... rig
33, Geo. V Foreman 200
33, " ..... 1 rig 2 rigs bldg
33, Wirt Oil Co. No. 4 ..... rig
33, Fox & Kavanaugh 600
33, " 400
33, Garden Oil Co. 500
33, Knox Bros. ..... 3 rigs
33, McKay & Breezze ..... 2 rigs
33 C. Mulkins ..... rig
33, Patty & Bliss ..... 2 rigs
41, Scott & Jones ..... drill
41, Smith & Co ..... rig
41, Frankenstein ..... rig
41, Gilbert & Co ..... rig
41, St. Joe Oil Co 600
41, Steele & Booth ..... rig
41, Galey & Young ..... rig
41, Dayton & Fairbanks 400
41, Hogan & Co 500
41, Wellman, Pitts & Ennis ..... sand
41, " ..... 4 rigs
41, Taylor & Mattock 600
41, Joe Jordan 400
41, Sweeney & Co 700
41, " ..... rig
41, Baum & Son ..... sand
41, Richardson & Co. 500
41, Carroll Bros. ..... rig
41, Davis & Kincade 400
41, " ..... rig
41, Dodd & Co 300
41, Bliss & King 300
41, Huff Bros 300
41, McCalmont Oil Co 300
41, Equitable Oil Co 530
41, " 300
41, Gilfillan & Co ..... 2 rigs
41, Jordan & Murray 300
41, McNulty & Mallony ..... 2 rigs bldg
49, A. & H. Painter ..... rig bldg
49, Finnegan & Nelson 800
49, " ..... rig
49, A. A. Richardson 400
49, Huff Bros 200
49, " 500
49, A. C. Smith & Co 200
57, T. J. Vandegrift 900
57, " 600
57, " 400
57, " ..... 2 rigs bldg
57, Johnson & Co. ..... 4 rigs
57, Whipple & Co ..... rig
57, " ..... sand
57, Loan & Thompson 100
57, " 200
57, " 400
57, " 600
57, Lynch & Snyder 500
57 " 300
58, Friendship Oil Co 500

Wells drilling 43
Rigs up and building 45

Total 88

BOLIVAR.

Lot 5, S. E. Adams ..... rig
6, Morse & Co ..... rig
6, Williams & Wolf ..... rig
8, Skinner Oil Co ..... rig
8, Morse & Conkin 500
8, Taylor & Allen ..... sand
8, Alfred Lee ..... rig
8, Story & Co 200
8, Empire Gas Co ..... 2 rigs
8, " " ..... 1 rig bldg
14, Allen Campbell & Co ..... fishing
15, " " ..... rig
15, " " ..... rig
16, Globe Oil Co ..... rig
16, Wiser & Kincade ..... rig
16, Scott & Moran 300
16 Peck & Freeman ..... 5 rigs
23, Johnson & Conroy ..... rig
21, G. Mackey ..... rig
24, Campbell, Allen & Co ..... sand
24, Mooney & Galey ..... rig
24, Milligan & Co 600
24, Christie & Nicholson 700
24, " " ..... rig
24, Christie & Co ..... rig
Lot 24, " " 400
24, Johnson & Co 500
24, " " ..... rig
24, Boulton & Bros ..... 2 rigs
24, Fisher Bros 5 0
24, " ..... 3 rigs
32, Newton & Patridge ..... drill
32, Barnsdale, Duke & Co ..... 4 rigs
32, " " ..... 2 rigs bldg
32, Hardison & Collins 40
32, " " 600
32, " " ..... 2 rigs up
32, Bickell & Kribbs ..... rig bldg
32, " " ..... rig
32, Charles Chamberlain 200
32, Black & George 500
32, " 200
32, " 500
32, " ..... rig
32, Willman & Smith 400
32, " 300
32, " ..... rig
32, Kansas Oil Co 700
32, " 500
32, " ..... rig
32, " ..... 2 rigs bldg
32, Sawyer & Co 100
32, " ..... rig
32, Brady & Green 800
32, " ..... rig
32, Bell, Lupher & Co ..... rig
32, " ..... rig bldg
32, John Cochran 600
39, Harding & Co ..... rig
39, Lynch, Snyder & Co 200
39, Stevens & Co 400
39, Hugh O'Neil ..... rig bldg
40, Mc drum & Co 500
40, Gilbert Farm Oil Co ..... sand
40, " 300
40, " ..... rig
40, Fertig Bros 160
40, Edward Burnett ..... rig
40, Lafayette Oil Co 700
40, " ..... 2 rigs
40, " ..... 1 rig bldg
Smith & Zeigler ..... rig
47, Manhatten Oil Co 5 0
47 " 200
47, " ..... rig
47, Jefferson Varney ..... 2 rigs
47, Clarion Oil Co ..... 2 rigs
47, " ..... 2 rigs bldg
48, Whitehill & Co ..... sand
48, E. Crawford ..... rig
48, " 100
48, A. B. Wiser ..... rig
48, Brawley Bros ..... rig
48, Curry Bros. ..... rig
48, Frank Palmer ..... two rigs
48, Forgie Bros 200
48, " ..... rig
55, Stocks & Co ..... rig
56, Smith & Zeigler 100
56, " ..... rig
56, Logan & Co ..... rig
56, Markham & Jordan ..... rig
56, Smith & Morris ..... rig
56, I. E. Dean ..... rig
56, " 300
56, " 500
56, McCalmont Oil Co 300
56, " " ..... four rigs
56, Hays, Book & Co. No. 7 540
56, " " 8 800
56, " " 9 300
56, " " 10 100
56, " " 11 400
63, Smith & Co 500
63, Giles & Cooper 700
63, " ..... rig
64, Greenlee & Alshouse ..... sand
64, " 100
64, Frank Huver 300
64, " ..... rig
64, Balliett & Co. ..... sand
64, " 401
64, " ..... four rigs
64, Ballard & Co 8 0
64, " ..... two rigs
64, J. C. Cornwall ..... rig
64, Hefferman and Hanley ..... three rigs
64, A. and H. Painter 100
64, " " ..... rig
64, Col. Dyer & Co. ..... sand
64, " ..... two rigs
64, Russell & Co 200
64, Reed & Co ..... rig

Wells drilling 57
Rigs up and building 95

Total 152

GENESEE.

Lot 7, Genesee Oil Co 300
7, McLaughlin & Co ..... rig
8, H. J. Morton 100
8, " " ..... 4 rigs
8, Willetts & Lovel 300
8, " " ..... rig
8, " " ..... 2 rigs bldg
8, J. C. Smith 600
8, C. E. Lineman ..... sand
8, Thos. Kerwin 200
8, Johnson & Co ..... rig
Lot 8, Root & Doherty 1000
8, Johnson & Co ..... rig
8, Hays & Knox 300
8, " " ..... rig
8, Cranston & Parkman ..... rig
8, Merrill & Perrin ..... sand
8, " " 600
8, " " ..... rig
16, Canfield & Thompson ..... rig
16, Hardison & Collins 200
16, " " ..... 2 rigs
16, " " ..... 1 rig bldg
16, Dunbury & Co 400
16, Canfild & Co 800
16, " " ..... rig
16, Vandergrift & Co ..... rig
16, Jones & Co ..... rig
16, Buzzell & Johnson 500
16, " " 300
16, " " ..... 2 rigs
16, A. P. Turner & Co 1000
16, " " " ..... rig bldg
22, Carlan & Golden ..... rig bldg
22, Greenlee Anderson 200
22, Unknown ..... rig
22, W. H Staley ..... rig
22, Matson & Co ..... rig
24, Book & Rhodes ..... rig
24, Willets & Co ..... rig
24, Armor & Co ..... rig
24, Greenlee & Anderson 100
29, Willets & Cranston 200
29, " " ..... rig
30, Stevens & Spreeter ..... rig
36, Fisher Bros ..... rig
36, Smith & Short 500
37, Stillman & Co ..... rig
37, Hickman & Co 200
Wells drilling 21
Rigs up and building 34

Total 55

ALMA.

Lot 1, Webster & Co ..... sand
2, Globe Oil Co 600
4, Scott & Pike 400
4, Scott & Pike ..... rig
4, O. P. Taylor ..... rig
4, C. Chamberlain 300
4, W. Bellamy ..... rig
5, Wellsville Oil Co ..... fishing, 900
17, T. B. Lewis 500
17, Triangle Oil Co. 800
17, " " 500
18, Anderson & Otis, No 3. 100
18, " " No. 4. 400
18, " " No. 5. ..... rig
18, " " No. 6. 300
18, O. P. Taylor 400
18, " 600
18, Worth & Co ..... rig
18, James Thornton 300
38i Minard Run Oil Co. ..... sand
39, D. W. Chambers 500
39, " 600
39, J. D. Downing 500
40, Duke & Norton ..... 3 rigs
40, Morse & Williams 709
40, Dwees & Weaver 300
40, F. W. Jones 900
40, McCoy & Welter ..... rig
53, Elliott & Co 390
58, Fletcher & Co ..... rig
59, Thornton & Co 600
121, Durnell & Co 500
121, J. D. Downing & Co. 400
121, " ..... rig
121, W. Andrews 700
121, McDonald & Co 400
121, " ..... 2 rigs
144, Love & Prescott ..... rig
144, J. W. Shirley 400
144, Chandler & Co 600
141, Johnson & Rathbone ..... rig
144, Fitzsimmons & Co ..... rig
144, Marshall & Sage ..... rig
141, Elliott & Co ..... rig
144, Elliott & Co 200

Wells drilling 30
Rigs up and building 17

Total 47

CLARKSVILLE.

Lot 1, Kittinger & Johnson ..... rig
9, Humphries & Pierce 400
9, " " ..... rig
9, Johnson & Colman 300
9, H. C. Worthman ..... rig
9, Book & Rhodes ..... rig
17, Lavens & Co. ..... 2 rigs bldg
17, Parkman & Cranston ..... rig
17, Blystone & Co 400
17, Cobb & Co 300
17, Brett & Russell ..... rig
44, Hicks & Co ..... rig

Wells drilling 4
Rigs up and building 9

Total 13
Total wells drilling in Allegany 155
Total rigs up and bldg in " 200

Grand total 355

MISCELLANEOUS.

Independence, Golden & Co 300
Almond, Dr. Sweet ..... 2 rigs
Postville, Gibbs ..... drill
Friendship, Boden & Co ..... drill
Andover, Wellman & Co ..... rig
Potter County Germania Oil Co ..... drill
" " Joe Tate ..... drill

WELLS COMPLETED.

WIRT.

Lot 17, Anderson & Gamble 25
17, Koch Brothers 30
25, Taylor & Allen 20
25, Wallace & Thompson 20
25, Coast Brothers 20
25, Fertig Brothers No. 3 20
25, Wallace & Co 25
33, George V. Foreman No. 2 30
33, " No. 3 25
33, McLeod & Co., No. 2 20
33, Hawley & Sloan 20
33, W. H. Gable 20
33, Breeze & Co 35
33, " 25
33, Knox Brothers No. 5 50
33, Wirt Oil Co 40
33, McCray Brothers 10
33, Reid & Brown 35
33, Patty & Bliss 30
33, Brawley Brothers No. 3 25
33, " 20
33, Wellman & Miner 25
33, Fox & Cavenaugh 25
33, McLeod Brothers 30
33, Gable & Co 25
41, T. J. Vandergrift 22
41, Smith & Zeigler 15
41, " 10
41, Alfred Oil Co 30
41, Carroll Bros. No. 2 25
41, " No. 3 25
41, " No. 4 10
41, Jordan & Co 20
41 Lester & Cotterell 60
41, Buzzell & Johnson 18
41, Wood & Brown 20
41, Davis & Cleminger 15
41, Friendship Oil Co 30
41, Church & Co 10
41, P. S. Bartlett 10
49, Ward & Co 20
49, Finnegan & Co 60
49, Painter Brothers 75
49, Greenlee & Co 75
49, Richardson & Co 75
57, Johnson & Co 40
57, Kirwin & Reed 40
57, Thompson & Co 35
57, Lynch & Snider 40
57, Coleman & Co 25
57, T. J. Vandergrift 50
57, " 40
58, Glatzan & Co 10
58, Rich & Friendship Oil Co ..... dry
Wells 54
Production 1540
Dry 1

Average about 26⅔

BOLIVAR.

Lot 6, Penzer & Love 20
6, C. B. Williams 40
5, Madison & Bishop 3
15, Skinner & Treat 10
15, Empire Gas Co 12
16, Globe Oil Co 4
19, Peck & Freeman 1 10
19, " 2 3
16, " 3 4
16, " 4 2
16, " 5 5
16, " 6 7
24, Christie & Bros. No. 5 20
24, Boulton Bros 25
24, Fisher Bros 20
27, J. B. Bradley 10
31, Hardison & Co. No. 1 12
31, " 2 20
32, Brown & Co 20
32, Duke, Brinley & Co 40
32, Bradley & Green 25
32, C. Chamberlain 30
32, Kansas Oil Co No. 3 20
32, " 4 25
32, " 5 35
32, Williams & Smith No. 2 15
" 3 25
40, Meldrum & Co. No. 3 25
40, " 4 30
40, Fertig Bros No. 4 20
40, McCalmont Oil Co 15
40, Gilbert Oil Co 10
40, E. D Parmeter 10
49, Smith & Co 25
47, Varney & Co 15
48, Wiser & Dilworth 6
48, Collins & Kitts No. 5 20
48, " 6 10
48, Ballard Oil Co 25
48, Wilson & St. Clair 20
56, Hays, Book & Gartland No. 5 10
56, " 6 15
56, " 7 15
Lot 56, I. E. Dean No. 1 25
56, " 2 20
56, " 3 15
62, Newton & Partridge 8
63, Frank Burr 20
64, Balliatt & Co. No. 2 40
64, " 3 40
68, Hardison Bros 15
64, Painter Bros. No. 2 30
61, Painter Bros No. 3 50
64, Anderson & Greenlee 60

Wells completed 65
Production 775
Average 12

ALMA.

Lot 1, Allentown Oil Co 12
18, Anderson & Otis 20
18, " " No. 0 25
18, Worthman & Gaskell 10
38, Snow & Co 15
40, Duke & Norton, No. 10 20
40, " " " 40
40, J. F. Jones 25
47, Mellon & Wester 15
121 J. D. Downing 10
144, McDonald & Heferman 10
144, Prescott & Love 25
144, No Name Oil Co 25
144, Johnson & Rathbone 15
144, Fitzsimmons 10
14 , Marshall & Co 12

Wells completed 16
Production 289
Average 18

GENESEE.

Lot 8, Willetts & Lovel No. 1 25
8, " " 2 20
8, Kernan & Co. No. 4 40
8, " " 3 35
8, H. J Morton No. 4 25
8, " " 5 25
8, " " 6 40
16, Jones, Boughton & Co 20
16, Golden & Carlin 35
24, Books & Rhodes 10
30, Wales & Co ..... dry
30, Roach & Doer 10
30, Smith & Zeigler 10
32, Barton & Haymaker ..... dry
38, Brett & Clark ..... dry
45, T. J. Vandergrift ..... dry
31, Johnson & Kittenger 10
59. Bradford & Dickson ..... dry

Wells 18
Production 305
Dry 5
Average About 17

CLARKSVILLE.

Lot 1, Knox & Millkins 15
9, Hughston & Co 10
9, Gilchrist & Co 5
9, H. C. Worthman 10
17, Emerald Oil Co 80
34, Hicks & Co ..... dry

Wells 6
Production 50
Dry 1
Average 8⅓

Wells completed in Allegany 159
Wells dry in Allegany 7
Production of wells 2959
Average per well about 18½

WELLS COMPLETED.

TUNA VALLEY AND EAST BRANCH.

LOT.	OPERATOR.	PRODUCTION.
Scott,	Beatty & Taylor,	20
"	Butts & Clark	18
"	Bower & Co	15
Rogers,	Cutting	10
E. T. C.,	Benner Bros	10
Germer,	Dennis	15
Drake,	Zeigler	10
"	Watson & Fulton	10
"	Dolly & Morris	10
Deitter,	Emery Oil Co., No. 11	12
"	Pier & Hodge, No. 5	10
B. I.	Taylor, Patterson & Leedom, No. 3	6
"	J.L. McKinney & Co., No. 15	8
Clark,	W. N. Hanna, No. 6	8
Clapp,	J. M. Clapp	12
Morris,	Emery Oil Co., No. 26	10
W. Brown,	Leopold Bros	12
J. DeGolier,	Quintuple Oil Co. No. 8	10
Harris,	Whitney & Wheeler	15
Salem,	Quintuple Oil Co., No. 7	15
Stettheimer,	Hill & O'Leary	15
Clark,	L. Haldeman & Son, No. 24	15
"	" 25	15
Cram,	Jno. Haggerty, No. 5	20

Wells 20
Production 311
Average 13

WEST BRANCH.

Mack, Fisher 10
Kissam, Williams & Co 15
Niles, Bradford Oil Co 10
Mack, Boden & Co 10
Mack, Boden 20

Wells 5
Production 65
Average 13

QUINTUPLE.

Lot 1, A. H. Booth 10
22, H. G. Tinker 15
48, Applebee Bros 12
88, Keown & Co 15
105, Smith & Bean 10
113, Granville & Co 15
123, Venture Oil Co 8
132, E. Strong 20
134, Emery Brothers 12
184, Hazeltine Brothers 8
198, M. J. Seymour 13
199, Wilbur & Co 9
199, Butler & Mentor 12
210, Hogeman & Co 20
236, Straight & Co 5
235, R. J. Straight 15, 12
252, Clark & Foster 8
261, William Brown 10
268, Richards & Co 21
269, Johnson & Co 15
279, John M. Congdon 15
Salem, Quintuple Oil Co 5

Wells 23
Barrels 288

KENDALL CREEK.

Young, P. T. & W. C. Kennedy 5
Buchanan, Anchor Oil Co 15
Schoonover, Jane Schoonover 12
Whipple, B. N. Hurd 12
Seward, Knox Bros., No. 11 15
" " 12 15
Turner, Crow, No. 2 2
Moore, Hazen No. 3 15

Wells 8
Production 101
Average 12½

FOSTER BROOK.

Bradley, Bradley & Ernst 10
McMurray, McMurray 10
Wilcox, Smith 12
Willets, Willets & Young 18, 15
" Smith & Co 12
" Brawley & Co 15
Snyder, Foxburg Oil Co 10
C. B. & H., Wolfe & Dreiblebis 15
" Treat & Porterfield 19, 12
" A. J. Caldren 15
" O'Dell 10
" W. M. Brown 12
" Monroe & Brown 10
" Rock City Oil Co 18

Wells 16
Production 204
Average 12⅔

SUMMIT, MARION AND RIXFORD.

Borden, Oak Shade Oil Co. No. 5 15
" S. B. Logan & Son, No. 5 15
Thurston, Wesley Chambers 6
" Bowers & Howell 10
Holt, F. E. Hall 8
Ingham, Hall & Wise 15
Sherman, J. W. Sherman, No. 5 8
" " " 6 10
Smith, Miles & Vaughn 10
" M. A. Andrews 10
" Knox Bros 12
" C. B. Whitehead, No. 4 15
Irons, Murray, Carter & McElroy 10
Anderson, Brennan & Freidel 15
Mathes, C. B. Whitehead, No. 5 10
Knight, John — Patton 5
Berger, J. West 10
Chambers, Hazelwood Oil Co. No. 23 12
Book, " " 20

Wells 19
Production 224
Average 11

TRAM HOLLOW.

John Duke, C. H. Coffin & Co. No. 19 20
" " " " 20 20
Borden, Van Vleck Oil Co. No. 14 15
" Forman & Lawton, No. 17 15
" Forman & The Union Oil Co. No. 10 20
" " " " 12 20
" Smith & Jones, No. 11 20
Hamlin, Daniels 20

Total 8
Production 159
Average 18¾

STATE LINE.

Barse, Hays & Hastings 20
" Bovee & Duck 15
" Steelsmith & Co 15
" Lack & Co 8
Angell, Angell Oil Co 20
" " " 25
" Benedict & Co 18
" Hogan & Murphy 15
" R. Jennings & Son 14

Angell, Harris & Wallace 18
" Wright & Smith 15

Wells 11
Production 181
Average 11⅔

FOUR MILE.

McCartney, G. W. Funk, No. 2 15
VanCampen, S. D. Karns 20
" Quintette Oil Co., No. 14 20
" " " " 15 24
Howard, Geo. Merrill & Co., No. 12 15
Johnson, B. Alford, No. 5 20
Dye, Coleman, Bell Bros. & Co., No. 18 15
Shattuck, Welsh & Van Schaick, No. 2 20
Bucher, Wm. Bucher, No. 6 20

Wells 9
Production 165
Average 18⅓

INDIAN CREEK.

H. Loop, J. D. Downing & Co., No. 14 10
" Globe Oil Co 10
" Hart & Hicks, No. 15 15
Wm. Loop, Keystone Gas Co 10
Drake, Thompson & The Forest Oil Co 15
Campbell, R. G. Bailey & Co, No. 16 15
Simms, Bradford Oil Co., No. 19 10
" " " 21 10
Hamlin, Treat & Mallory 12
" Mallory Bros 12
" Plummer Oil Co 18
Hooker, Compromise Oil Co., No. 24 15
Weston, Winsor & McNulty 10

Wells 13
Production 167
Average 13

MEEKS CREEK.

Keating McKinney Bros, No. 24 15
Kansas Forest Oil Co 12

Wells 2
Production 27
Average 13½

COLE CREEK.

Rew, Tuna Valley Oil Co 15
M. W. & H. Forest Oil Co. No. 4 20
" " " 5 15
Lot 543-74, Bayne, Fuller & Co., No. 35 20
" " " " 36 15
Lot 178-9, F. W. Andrews & Cumulative Oil Co., No. 1 15
" " " " 2 20
" " " " 5 15
" " " " 6 15
Lot 484, Hamlin & Rose, No. 9 18
470-1, Aiken & Whitey, No. 6 20
454-5, Munhall & Smithman, No. 9 10
454-5, " " " 10 12
478-9, M. Murphy, No. 1 30
478-9, " " 2 40
478-9, " " 4 25
439-1, Davis & Murphy, No. 20 30
480-1 " " " 21 40
439-1, " " " 22 50
480-1, " " " 23 40
480-1, Davis, Murphy & Jones, o. 35 35
499, Forman & Union Oil Co. No. 6 15
426, A. J. Thompson, No. 16 15
426, " " 17 18
—— Spain & Grace 10
—— Short Oil Co. No. 6 15
—— Brown & Keller, E. Duhil, No. 1 15
266, F. W. Andrews 30
12, " 15

Wells 2
Production 63
Average 21¾

BIG SHANTY.

BINGHAM LANDS.

Lot 174, Kishwaukee Oil Co, No. 23 25
93, Lockwood & McKevett, No. 4 25
93, Bowen & Co., No. 5 25
Sullivan, Book & Tait 20
Hamlin, Minard Run Oil Co., No. 5 20
" " " " 6 25
Bingham 169, Dent Oil Co 20

Wells 7
Production 165
Average 23½

MOODY TRACT.

Lot 60, Caldwell & Penny 10
49, Globe Oil Co 10
67, Euber & Co 15

Wells 3
Production 35
Average 12

KINZUA.

C. H. & P. Cornwall, Parker & Hasson No 32 30
Union Oil Co., No. 28 20
Anderson—Wright & Degolia ..... dry
Anderson—Tate & Parker ..... dry

Wells 4
Production 50
Average 12½

MIDDLE DISTRICT.

CLARENDON.

Lot 77, E. McDermott, No. 1 15
77, Nickle & Munn, No. 1 12
77, Union Oil Co., No. 4 12
78, Beatty, No. 11 12
79, Marsh, Kuhn & Robinson, No. 4 15
80, F. Barnsdall & Co., No. 1 15
80, Fliason & McCracken, No. 5 15
105, Atkinson & Co., No. 2 15
105, Short, Oyster & Thornton, No. 2 18
105, Sugart Bros 12
106, D. Foster, No. 2 6
106, F. H. Rockwell & Co., No. 6 10
106, Schonblom & Co., No. 2 15
106, Malone & Thompson, No. 1 12
106, Geo. Given, No. 5 18
106, Coltebaugh & Townsend, No. 2 12
494, Sherman & Estep, No. 4 8
495, Elias Katz, No. 2 10
461, Caldwell, Smith & Co., No. 2 8
528, J. C. Wales & Co., No. 2 18
528, J. B. Drake & Co., No. 1 20
528, Bow & McCoy, No. 1 20
528, Coe Bros., No. 2 15
528, Spear & Armstrong 15
328, John Brown 20
558, Goal, Goss & Haskell, No. 3 8

SHEFFIELD.

409, Union Oil Co., No. 3 6
408, Horton, Crary & Co., No. 3 15
408, Wetmore & Co., No. 2 ..... dry
397, Armor & Clark, No. 2 20
387, W. Roth, No. 1 15
438, Emerson, Shank & Co., No. 1 20

Wells completed 34
Production 442
Average about 14

Lower Country.

CLARION.

Cherry—Chambers 5
Dan Ritts—Thomas Griffin 5
Crawford—H. Crawford 10

BYRON CENTRE.

Alex Anderson ..... dry
I. S. Anderson—Hauser & Graham 12
" —Daniels & Daugherty 3
I. Kohlmyer—Hoot & Lindsay 10
Kingsley—Gilchrist ..... dry
Daily—Hulings & Co 5
Lawrence—Lawrence & Co 6
Sutton—Hays & Maxwell 10
J. P. Crawford—J. P. Crawford & Co 12

BUTLER AND ARMSTRONG.

Kelly—Brawley Bros ..... dry
Kramer—Showalter Bros & H ..... dry

VENANGO COUNTY.

Cherry Run—Coruthers 5
Kaley—Kugler & Co 8
Fort—Phillips Bros ..... dry
Sheasley—Sheasley 6

Wells 18
Production 97
Average 5⅓

WELLS DRILLING.

The Bradford Field.

TUNA VALLEY.

LOT.	OPERATOR.	DEPTH.
Leonard, Leonard		drilling
" D. S. Allen		rig
Dilks, Morrison, No 5		900
Scott, pur., L. Bowers		950
" Beatty & Taylor		rig
" Butts & Clark		rig bldg
" Beatty & Hillman		rig
" Van Wormer & Mercer		600
" Abbott & McGinnis		rig
Seward, Tracy & Cowles		rig bldg
Ward, Ward		100

EAST BRANCH.

E. T. Co., Benner Bros & Co. No. 9 ..... drilling
" " " " 10 ..... rig
" Anchor Petroleum Co. No. 7 1400
Hawkins, P. C. L. & P. Co. & P. T. Kennedy, No. 11 ..... rig
Newell, Book & Co., No. 15 ..... rig
Drake, Ziegler & Co., No. 3 ..... rig bldg
" J. S. Book & Co., No. 21 ..... drilling
Cutting, Guy Drake, No. 1 ..... rig
Wright, F. G. Keatley, No. 3 ..... rig
Deiter, Emery Oil Co., No. 12 1400
" " " " 13 ..... rig bldg
Pike, Book and Rhodes, No. 6 ..... rig
Foster, Tarball & Shaffer, No. 3 ..... rig
" " " " 4 600
Cory, Alfred Ford 400
B. I. Taylor, Bovaird & Seyfang ..... rig
" Breckenridge & Harper, No. 3 ..... rig
" Howorth & Merrick, No. 3 ..... sand
" " " " 4 rig bldg
" Risher & Zeigler, No. 4 ..... sand
" " " " 5 rig bldg
B. I. Taylor, J. L. McKinney & Co. No. 16 500
" " " " 17 ..... rig
Springer, J. H. Springer & Co 400
Clark, W. N. Hanna, No. 7 359
Clapp, J. M. Clapp, No 38 1000
" " " ..... rig
Morris, Emery Oil Co. No. 27 1000
" " " 28 600
" " " 29 ..... rig bldg
" " " 30 ..... rig bldg
" " " ..... 3 rigs
Stoddard, Emery Oil Co. No. 3 ..... drilling
Howard, Gardner & Co ..... rig
Willard Brown, Morris Bros. No. 3 1200
" " Tally ..... drilling
——, Unknown ..... rig
I. DeGolier, Quintuple Oil Co. No. 9 400
Jewett, Quintuple Oil Co ..... rig bldg
Shady, Watson & Fulton ..... sand
" " " ..... rig
Dykeman, Caldwell, Hampshear & Co ..... rig

WEST BRANCH.

Mack, Fisher ..... rig
B. O. C., Heald 600
Wilson, H. E. Picket ..... sand
Kissam, Williams ..... rig
" Chapin & Co ..... rig, 1000
Cramer, " ..... rig
Wagner, Bradley ..... rig
Gas Hollow, A. F. Heald ..... rig bldg
Wagner, Emery & Bradley, No. 3 ..... rig
Brown, Clark & Book 1000
Stinson, J. G. Williams, No 5 ..... rig
Crooker, Lewis Deming & Co ..... rig
" George Crooker 500
" Carl & Brinton ..... rig
Emery, Kuntz 500
Cole Avenue, Cole 800
Waub, Wray & Williams 1100

Drill 29
Rigs 30

Total 59

QUINTUPLE TRACT.

23, J. E. Ralph, No. 2 400
23, " " " 3 ..... rig
25, J. S. Wilson, No. 1 ..... rig
25, " " " 2 ..... rig
31, Stettheimer & Co., No. 2 ..... rig bldg
39, Gillis & Hall, No. 3 ..... rig
52, J. C. Wales, No. 3 ..... rig
67, E. Strong & Co., No. 2 1700
70, Applebee & Bro ..... rig bldg
71, " No. 2 1000
73, Etna Oil Co ..... rig bldg
101, E. Strong & Co., No. 2 200
105, Smith & Seaman, No. 2 ..... sand
110, G. M. Barney, No. 2 ..... sand
132, Woodbury & Campbell, No. 2 300
134, D. Emery & Co., No. 3 ..... sand
175, D. Atwater & Co ..... rig
176, H. A. Booth & Co ..... rig
180, Field & Co 360
184, Hazleton & Co., No. 3 200
186, Vrooman & McGraw, No. 3 ..... rig bldg
190, Jennings, Hunter & Co., No. 3 ..... rig
195, Wilbur Wentz, No. 2 500
200, Wartin & Butler ..... rig
217, Garner, Cheney & Co 600
218, " " No. 3 ..... rig
219, Abbott & Proper, No. 2 ..... sand
225, Casper Taylor 300
227, Geo McCullough, No. 2 200
232, R. J. Straight, No. 3 300
233, " " 2 ..... rig
236, " " 2 1400
240, Barnsdall Bros., No. 2 200
252, Clark and Foster, No. 4 600
253, " " 1 800
253, " " 2 ..... rig
254, " " 1 1000
254, " " 2 ..... rig
254, " " 3 ..... rig
255, " " 4 ..... rig
256, Lord & DeWolf, No. 3 400
258, Burrows & Co., No. 3 ..... rig
260, Conover, Kelly & Stewart, No. 4 1000
261, Brown & Watson, No. 5 300
265, Matthews, Boggs & Curtis, No. 4 1000
268, Gilbert & Shipman, No. 6 ..... rig
269, H. J. Pemberton, No. 6 1500
271, Eaton & Bundy, No. 2 ..... rig
272, Richords & Pickering, No. 5 ..... rig
276, L. H. Cawley & Co., No. 4 400
Salem Quintuple Oil Co 400

Drill 28
Rigs 23

Total 51

KENDALL CREEL.

Melvin, P. C. L. & P. Co., No. 54 ..... rig
" " " 55 ..... rig
Richardson, Smith ..... rig
Lafferty, Johnson & Co., No. 26 1000
Davis, Dr Hammond ..... drilling
" Adams ..... rig
W. J. Boyd, Zane & Taylor ..... rig
Buchanan, Anchor Oil Co. No. 10 1200
" " " 11 ..... drilling
Frank Moore, P. C. L. & P. Co., No. 9 ..... rig
" Huff, Ege & Martin, No. 9 900
Whipple, B. N. Hurd, No. 7 200

Whipple, Dinsman.....1000
Monroe, Jacob Sheasley.....400
Kellogg, Morrison & Weir, No. 2.....200
Mack, E. K West, No. 17.....rig
C. Storms, Wright & Sowers.....rig bldg
Fisher, Peck & Freeman, No. 16.....rig
" " " 17.....rig
" Larrabee & Whedon, No. 3.....rig
Farr, Seikregg & Co.....rig
Dalloph, Turbell & Robinson.....rig
" Howe & Parker.....rig bldg
Turner, Saingle.....1091
Enterprise, Transit Co., anchor oil.....1500

Drill.....11
Rigs.....14

Total.....25

FOSTER BROOK.

Bradley, Bradley.....drilling, rig
Tate, Tate.....rig
McMurray, McMurray.....rig
Willett, Willett & Young.....1500, rig
" Smith & Co.....drilling
" Brawley & Co.....rig bldg
McKelvy, Dewitt Oil Co.....rig
Snyder, Foxburg Oil Co.....drilling
C., B. & H., Wolf & Dribebbis.....800
" Baily.....drilling
" Moore Bros.....400
" John Lewis.....drilling
" Howe Bros.....drilling
" Treat & Porterfield.....sand
" Hugus.....rig bldg
" A. J. Coldron.....drilling, 3 rigs
" Gardner.....sand
" Brown.....1000
" Smith & Toby.....drilling
" Eighney Bros.....drilling
" Monroe & Brown.....drilling
" Ralph Bros.....drilling
" H. E. Pickett.....rig
" 33, Vandergrift & Co.....800

Drilling.....18
Rigs.....11

Total.....29

SUMMIT, MARION AND SIXFORD.

Borden, Oak Shade Oil Co. No. 6.....rig
" Whitehead & Ingham, No. 1.....500
" " " " 2 rig bldg
" Shear Bros & Braunshwager drilling
" " " rig bldg
Thurston, Wesley Chambers, No. 2 rig bldg
" Judd & Glass.....1800
" " " 3.....rig
Norton, F. W. Mitchell, No. 10.....rig
Holt, F. E. Hart.....200
" P. T. & W. C. Kennedy, No. 10.....300
Whitecomb, Hardly Able Oil Co. No. 4.....rig
Smith, M. A. Andrews.....500
" Knox Bros.....300
" " .....rig bldg
" Sherman.....rig
Irons, Duke Centre Gas Co.....rig
Dodge, Flannagan & Burdick.....rig
" Bradley.....rig
Anderson, Brennan & Freidel, No. 5.....100
Allen, Wm. Doe, No. 8.....800
" " " 9.....300
Ingham, Robert Gregg.....500
Cummings, Green & Zimmerman.....rig bldg
Berger, P. T. & W. C. Kennedy.....rig bldg
Chambers, Hazlewood Oil Co.....drilling
Book, Hazlewood Oil Co. No. 31, fishing 1000
" " " " 32.....200
" " " " 33.....rig bldg
Bingham, Mina Oil Co.....sand

Drill.....13
Rigs.....15

Total.....28

TRAM HOLLOW.

Middaugh, Blackmer & Jackson, fishing 1500
John Duke, C. H. Coffin & Co., No. 21.....rig
" " " 22.....200
Borden, Forman & The Fin Oil Co. No. 11 300
" Forman & Lawton No. 12.....drl'g
" Tanner & Co.....rig
" Stewart & Co.....drilling
" " .....rig

OIL VALLEY.

Hamlin, J. B. Daniels & Co., No. 14 drilling
" " " 15 rig bld'g
Duke, John I. Dunn.....sand

STATE LINE.

Barse, Hays & Hastings.....drilling
" " .....rig bldg drilling
Angell, Angell Oil Co.....3 drilling, 4 rigs
Fullerton, Angell Oil Co.....4 rigs
Angell, Hogan & Murphy.....1400
" Perrine.....rig bldg
" Johnson.....rig, 500
" Waugh & Co.....rig
" Burns Bros.....rig
" M. J. Tufft.....400
" R. Jennings & Son.....15,,sand
" Piper & Dowley.....100
" Kelly & Weston.....drilling
" Tucker Bros.....600
" Stewart & McDonald.....200
Barse, Henry Jennings.....1000
" 188, J. D. Downing & Co.....rig
" Ryan & Connelly.....rig
" Union Oil Co., No. 11.....400

KANSAS BRANCH.

Keating, Forest Oil Co., No. 31.....600
" " " " 26.....rig bldg
" " " " 28.....rig bldg
Duke, W. & J. Duke, No. 4.....500

Drill.....24
Rigs.....21

Total.....45

INDIAN CREEK.

H. Loup, J. D. Downing & Co., No. 13, rig bldg
Miles Loup, James O'Neil, No. 9.....100
" " " 10.....rig
" " " 11.....rig bldg
" Hart & Hicks, No. 16.....drilling
" " " 17.....rig
" " " 18.....rig
" Benson & Binnie, No. 5.....400
William Loup, Hardison & Kribbs, No. 3 rig
" Peck, Freeman & Follett No. 25, 1300
" " " 26, rig
" " " 27, rig
Campbell, Bovard, Seyfang & Co. No. 3.1200
Simms, Bradford Oil Co., No. 23.....1700
Hamlin, Mallory Bros.....rig
" Chautauqua Oil Co.....700
Pine Lot, Eckerly, No. 2.....rig
Keyes, Greenlee & Decker, No. 3.....100
Pahnter, Purtell & Bros. & Co. No. 11.. rig
" " " 12.. rig
" Leonard.....rig
Weston, McNulty & Windsor.....rig bldg

MEEK'S CREEK.

Wheeler, Galey Bros., No. 42.....600
Keating, J. L. McKinney & Co., No. 25,. 300
Weston, " " " 14, rig
Gale, Curtis & Taylor, No. 5.....rig
" " " 6.....rig
" Moore & Watson.....rig
" Thompson & Canfield.....rig
Ayer, Unknown.....200
Cook, Cook.....drilling

Drilling.....12
Rigs.....20

Total.....32

FOUR MILE.

McCartney, Geo. W. Funk, No. 3.....rig
" W. B. McCartney, No. 5.....600
Donahugh, Brown & Norris.....rig
Van Campen, Brahaney & Duncan, No. 4 rig
" Quintette Oil Co., No. 18.. 600
" " " " 19 rig b'dg
Stevens, Book & Rhodes.....drilling
" Blatchley & Farrell.....600
Van Campen, Geo. Van Campen, Lot 82. rig
" " " 97.. rig
" Franchott Bros.....700
" " .....rig
" " .....2 rigs bldg
" E. W. Fink.....200
" Geo. Merrill & Co., No. 12. 500
" " " 14drill
Frank Waters, Calkins & Kelly, fishing .1650
Bozzard, Waccie Oil Co., No. 11.....1000
" " " 12.....rig
Johnson, B. Alford, No. 4.....rig bldg
" Argue & Cobb, No. 6.....800
Jos. Waters, Williams & Garr, No. 5.....300
" Howard & Baum, " 16.....300
" Chas. Gilespie.....rig
Dye, Coleman, Bell Bros. & Co., No. 11.. 600
" " " " 12 drilling
Shattuck, Curtis & McCormick, No. 5 drilling
" " " 6 rig bldg
" Welsh & Van Schaick, No. 3.. 1200
" " " 4.. 600
" " " 5.. rig
" " " 6.. rig
" Eaton & Howe.....drilling
" " .....rig
Hallander, Brown & Son, shut down....1200
Howard Evans.....3 sets timbers

Drill.....19
Rigs.....16

Total.....35

KINZUA.

Bingham, Lot 40, J. M. Tait, No. 2.....rig
" J. M. & Thos. Tait.....rig
U. O., pur, J. M. Guffy, No. 26, shut down sand
" " " 29,.....rig
" Union Oil Co., No. 30.....drilling
C. & H., Carter & Hurd, " 14.....rig
Patterson, P. C. L. & P. Co.....rig
VAN SCOY SECTION AND SUGAR RUN.
Conover, McIntyre Bros.....700
Anderson, Parker & Co., No. 2.....rig
Taylor, Mills & Mullen.....rig bldg
English, Dew Drop, No. 4.....rig
" Ege Oil Co.....rig bldg
Conover, Duke & Parker.....rig bldg

Drills.....3
Rigs.....9

Total.....12

BIG SHANTY.

Lot 169, Ident Oil Co., No. 14.....1500
169, " " 15.....600
169, " " 16.....200
169, " " 17.....rig
174, Kishwaukee Oil Co. No. 24.....1200
174, " " 25.....300
174, " " 26.....rig
176, John Fertig & Co., No; 3.....drilling
176, " " 4.....rig
153, J. J. & T. J. Vandergrift.....rig
93, Lockwood & McKevett, No. 4 rig bldg
93, " " 5.. 250
Sullivan, Waugh & Porter, No. 2.....sand
" " " 3..rig b'dg
" Mullen & Mills, No. 4.....1200
" " " 5.....rig b'dg
" Book & Tait.....rig bldg
" McKeown lease, Potter, Thompson & Co.....1800
" McKeown lease, Potter, Thompson & Co.....rig bldg
Hamlin, Minard Run Oil Co., No. 7.....sand
" " " " 8.....300
" " " " 9.....200
" " " " 10.drilling
" " " " 11.rig bldg

MOODY TRACT.

Lot 53, Jennings & Co., No. 4.....rig
60, Boyne, Caldwell & Penny, No. 3 drilling
60, " " " No. 4.. rig
60, Sara Bernhardt Oil Co.....drilling
63, Minard Run Oil Co., shut down sand
67, J. W. Euber & Co., No. 3.....1100
67, Johnson & Kittinger.....600
67, J. Alshouse & Co.....drilling
Dent, Whitney & Wheeler.....drilling
" P. C. L. & P. Co.....1000
" " .....rig
" Narrow Gauge Oil Co.....drilling
" " .....rig
" Dent Oil Co., No. 7.....rig bldg
" " " 8.....800
" " " 9.....200
" " " 10.....200
" " " 11.....100
" " " 12.....rig

Drill.....26
Rigs.....15

Total.....41

COLE CREEK—BINGHAM LANDS.

C. O. Co., pur, Columbia Co., No. 27.....rig
G. & Van V. pur, Union Oil Co., No. 7..sand
" " " 16..rig
" " " 17..rig
" " " 18..rig
" " " 19..rig
" " " 25..rig
" " " 26..rig
" " " 27..rig
Rew, J. M. McDonald, No. 6.....drilling
M. W. & H. R. Jennings & Son, No. 6.....rig
" Forest Oil Co., No. 6.....rig
" W. W. Thompson, No. 7.....1600
" " " 8.....rig
Lot 265, Tucker & McCormick, No. 3.....rig
387, P. T. & W. C. Kennedy, No. 10.. rig
107, Johnson & Co., No. 48.....1500
107, " " 49.....rig
407, Bennett & Quick.....rig
453-4, Bayne, Fuller & Co., No. 37..1600
553-4, " " 38..1200
453-4, " " 39..1200
453-4, " " 40..1000
453-4, " " 41..100
453-4, " " 42..drill
465, " " 31..1600
178-9, F. W. Andrews & Accumulative Oil Co., No. 6.drilling
178-9, " " " 8.....rig
470-1, Aiken & Whitney, No. 7.....1700
470-1 " " 8.....900
170-1 " " 9.....rig
170-1 " " 10.....rig
170-1 " " 11.....rig
451-5, Munhall & Smithman, No. 14. 200
478-9, M. Murphy, No. 5.....1200
" " " 6.....drilling
" " .....rig bldg
463-9, Cumulative Oil Co., Eaton Bros. No. 1.. 500
" " " " 2.. 300
" " " " 3.. 100
" " " " 4.. rig
" " " No. 5..rig bldg
466, Cornell.....rig
502, Forman & Union Oil Co.....rig
491 " " No. 7. shut down, sand
491, Forman & Union Oil Co., No. 8.. rig
" " " " 10.. rig
" " " " 12.. rig

Lot 488, Johnson & Union Oil Co., No. 25b. rig
" " " 28b. rig
" " " 32b. rig
501, J. L. McKinney, No. 2 rig
409, " " 3 rig
406, " " 4 rig
399, Forest Oil Co., No. 6 rig
Simpsons, Geo. V. Forman sand
" " 1500
" " 1000
" " 2 rigs
" " rig bldg
Lot 391, A. J. Thompson, No. 11 drilling
426, " " 18 rig
Brown & Keller, E. Duthil, No. 2 rig bldg

Drill. 25
Rigs 39

Total 64

MISCELLANEOUS.

McKean Co., Sartwell Station, fishing 300
Eldred, Enterprise Oil Co 800
Elk, warrant 2532, Tack Bros 1400
" " 3655, Halleck Bros, Johnson 7 0
" " 3568, T. W. Larse & Co rig
" " 1777, Titusville Co rig
" " 3635. T.W. Larsen & Co. rigbldg
" " 3663, " " drilling
" Benegerett, Foster & Whipple 1600
Allegany, Name Unknown rig
" " rig bldg
Angelica, " drilling

Drill 7
Rigs 5

Total 12

The Middle District.

SHEFFIELD.

Youngsville, Youngsville Oil Co rig
Wetmore, Kuler, shut down 1950
Balltown, Grandin Bros sand
" John Cornwall fishing
Lot 408, MaGee & Horton 500
408, wetmore & Co 2 rigs
408, MaGee & Horton rig
409, " " rig
409, Union Oil Co rig
396, MaGee & Horton sand
396, " " rig
397, Clark & Aymor 300
397 " rig
212, Truby & Co rig
Lacy, Emery, Emerson & Co rig

CLARENDON AND STONEHAM.

Lot 35, Ackley, Newton & Co 200
52, Betty rig
56, Ferguson rig
56, D. Eiseman rig bldg
56, Coe Bros rig bldg
56, John Alshouse rig bldg
76, McCoy & Co rig
77, Stoughton & Co 300
77, " rig bldg
77, Geo. Givens 900
77, Marsh & Brown 800
77, " rig bldg
77, Crosby & Co rig
77, Hoffman & Co rig
77, Union Oil Co rig
77, Munn, Nickle & Co 5 rig
77, McDermott, No 2 rig bldg
77, Joe Clinton drilling
77, St. John rig
77, Furgerson & Alshouse 400
77, Huntington & Foster rig
78, David Beatty, No. 12 rig bldg
78, " " 13 rig
78, Lapham & Co drilling
79, Duke & Harris 800
79, Marsh, Kuhn & Co. 5 rig bldg
79, Captain Butler 600
80, Elison & McCracken spudding
80, Barnesdale & Co 2 drilling
105, Brinton rig bldg
105, Atchison & Co 3 rigs
105, " rig
105, Thornton & Co drilling
105, McWilliams & Branch 600
105, Shugart Brothers rig
106, Lapham & Co drilling
106, Sherman & Seymour 500
106, Caultenbaugh & Co rig bldg
106, Conrath, No. 1 800
106, Givens drilling
106, Duffield & Co 3 drilling
106, Roy & Co., No. 5 700
106, " " 6 500
106, Fay & Co 500
106, Archibald & McClure 200, sand
106, Schonblom & Co 300
106, " rig bldg
107, H. P. Malone 2 drilling
107, Lapham & Co drilling
107, Fay 500
107, Rockwell & Co 600
108, Eureka Oil Co rig
108, Grandin & Co rig
108, Duke rig
109, Little, Tolzore & Co drilling
161, Clark & Armor rig
162, Utzingar & Co rig
162, Verback rig
464, Caldwell, Smith & Son rig
494, Sherman & Estep 5 rig
494, " spudding
495, E. Katz rig
495, R. Taggart 500
Egan, Anchor Petroleum Co sand
Lot, 498, Bell & Hopewell cased
498, Conway & Co 500
498, Boyer rig bldg
498, Candy drilling
498, Kelly & Richards 900
499, Taggart & Co 400
499, Archibold & Co rig
528, " rig
528, Eagan & Co, 2 sand
528, " 3 rig
528, Speer & Armstrong, 5 rig
528, Wales drilling
528, Reed & Connor 500
528, Harley rig
528, Ferguson & Becom drilling
529, Kane & Co drilling
528, Cochran rig
528, Drake drilling
529, Forquer & McConnell rig
529, Unknown drilling
556, Cornen rig
557, Robert Bryan sand
558, St. John & Landis rig
Thompson, Thompson rig bldg
Rogers, Ackley & Benton spudding
Riddlesperger, Jesse Johnson spudding
Clark, Judson rig
Lot 2877, Clark & Armor, shut down 1000

Drilling 51
Rigs 61

Total 116

Lower Country,

CLARION.

Call, Butler & Smith 300
Baker, Oak Shade Company 900
H. Black, Jeanette Brothers 850
Wentling, Putnam & Wentling drilling
Edenburg, Calahan rig
Crawford, Crawford & Moore drilling
" " rig
Foust, Lloyd & Foust rig
Richey Run, Friar & Co 1000

BYROM CENTRE.

Long, Craig & Cal Anderson. 600
A. Kohlinger, Goodrich & Co 250
" Taylor & Co 300
D. R. Crawford, Steelsmith & Co drilling
John Middleton, Dr Foster drilling
J. A. Middleton, Peteroff & Co drilling
Grant, Grant Brothers rig
Hoover, Chaplin & Co sand
Martin & Co 200
McCandlas, J. P. Crawford & Son 100
Widow Crawford, McCalmont & Co 700
Steelsmith & Co 600
Sedgwick, Trout Run Oil Company 1000
William McGinnis, Peter Smuck 750
Miller, Strong & Adams rig
Lawrence, Lawrence Oil Co 1000
Hoover, Chapin & Co 200
King, Hartly 200

BUTLER AND ARMSTRONG.

Jamison, Jamison & Co 1200
Bell, A. Sheidemantle rig
Leonard, Leonard & Painter rig
Stanley, W. H. Orton 800
Morgan, Farker & Co 500
" Simpson & C 700
East Brady, Hunter & Co 1300
Hamel, Simcox & S. Myers 200
Ichenlaub, Phillips Brothers rig
Crow, Baldridge Oil Co 200
Dufferd's, H. McBride rig
Gibson, Monroe & Watson 500
Sherley, Hagerson & Co rig
Parker, J. A. Parker & Co drilling
" J. A. Widger 300

VENANGO.

Graham, Elliott & Co 500
Gorden, James Smith 100
Alcorn, Standard 200
Church Lot, Robert Porter 300
President Twp, Crawford & Co rig
" " drilling
" E. E. Clapp rig
Simcox, P J. McAlvee rig
Rynd, Camp & Rattan rig
Galey, Kugler & Co., No. 3 200
Kauffman, Kugler & Kauffman, No. 1 300
Allison, Fisher Bros 200
Furnace trail, Fisher Bros rig
McBride, McBride & Co., No. 2 300
Salem, Rouseville Oil Co rig

Drill 41
Rigs 16

Total 57

Heavy Oil Field.

WELLS COMPLETED.

Fitzjerald, Tack Bros 1½
Galoway, J. Hurley 2
Gillingham, W. T. Baum 1
Smith, Acme Oil Co., 3, 2, 3 8
Connor, Hurd Bros 2
Frank, C. Frank 2
Galena, Galena Oil Co dry
Cundle, Galbraith & Reamer 1
" R. Cundle 2
Fee & Kunkle, J. Sheasley dry
" H. Kunkle 2
" N. N. Smith 1
Shippen, E. W. Shippen 1½
Bleakley, W. C. Howe 3
Bissell Oil Co., Heasley & Co 2
De. Fee, Elliott & Co dry
Dow, Connors, & Gilbraith 1
Point, W. H. Lane & Co 2
McQuaid, McElhaney & Co 2
Avans, Mrs. Painter ½
" C. E. Smith 1

Wells 23
Production 34½
Dry 3

RIGS UP—WELLS DRILLING.

Lobb, W. C. Howe 400
Point, W. H. Lane rig up
" John Turk rig up
Galloway, Jerry Hurley 300
Smith, D. Grimm 400
Gillingham, J. H. Cain 300
Fitzgerald, Allen & Co rig up
" " rig up
Smith, Acme Oil Co 200
" " 100
" " spudding
Evans, C. E. Smith 250
Fitzgerald, Tack Bros 50
Galena, Galena Oil Co rig building
McQuaid, Galbraith & Co rig up
Cundle, Galbraith & Reamer rig building
" " rig up
Simmons, Connor & Galbraith rig up
Wigart, Thomas & Co 200
Bissell, Heasley & Co rig up

Wells drilling 9
Rigs up and building 10

Total 19

Summary.

DRILLING WELLS.

	DRILL.	RIGS.	TOTAL.
Quintuple	27	23	50
E. & W. Branches and Tuna	29	30	59
Kendall Creek	11	14	25
Foster Brook	18	11	29
S., M. and Rixford	14	15	29
Tram Hollow	5	3	8
Oil Valley	2	1	3
State Line and Knapps	16	15	31
Kansas Branch	2	2	4
Indian & Mecks Creeks	12	20	32
Four Mile	19	16	35
Kinzua	3	9	12
Moody and Big Shanty	26	15	41
Cole Creek & Bingham	25	39	64
Miscellaneous	7	5	12
Total	215	218	433
Warren	5	61	116
Lower Country	41	16	57
Allegany	155	109	355
Tota's	466	495	961

WELLS COMPLETED.

	Wells.	Prod.	Dry
East Branch & Tuna V'y	24	311	—
Wes Branch	5	65	—
Kendall Creek	8	101	—
Foster Brook	16	204	—
Summit, M. & R	20	221	—
Indian and Meek's Creek	14	184	—
Four Mile	9	165	—
Kinzua and Sugar Run	2	20	2
Kansas Branch	1	12	—
Cole Creek	30	648	—
Tram Hollow	8	150	—
Oil Valle	1	9	—
State Line & Knapp's Crk	11	184	—
Big Shanty and Mooly	10	210	—
Quintuple tract	23	288	—
	180	2,744	2
Clarendon, or Middle Dist.	32	444	1
Lower Country	18	97	5
Allegany	154	2,760	7
Grand totals	384	6,045	15
Average, about			15¾

CAPITAL IN THE OIL REGIONS.

PERHAPS no other business or industry of similar age ever commandad greater capital in its development than that of oil. The striking of the first well by Colonel Drake was an incentive to the thousands of capitalists of the East, who seemed to become suddenly imbued with the spirit of adventure, to bring fortunes and lay them at the shrine of Pennsylvania's petroleum god. Were a book written containing a complete record of the "air castle" fortunes that were never realized, it would fill a room of no very limited dimensions. During the first two years of the war there was a lag in enterprise, but just before and immediately after the completion of the unpleasant struggle the excitement witnessed throughout the country knew no limit. The whole region from Seneca Lake, N. Y., at the north, to Pittsburg and even to West Virginia at the south, was overrun by men in search of leases, who looked upon every ravine between the mountains, and every stream that coursed through the valleys as certain to possess some petroleum characteristics. While, therefore, the drill on Oil Creek was opening the seemingly inexhaustible sources of supply, and the operators were running mad with delight, speculators were also busy trying to develop something equally as good as Oil Creek in other localities. Confusion confounded reigned and money was squandered in a manner calculated to startle one from solid sleep. Here is an estimate of the amounts supposed to have been invested by a few of the principal cities of the country:

Place.	*Amount.*
Philadelphia	$168,715,000
New York	134,045,000
Pittsburg	15,740,000
Boston	2,300,000
Baltimore	1,750,000
Titusville	4,000,000
Cleveland	2,200,000
Chicago	1,000,000
Cincinnati	750,000
Washington	700,000
Buffalo	200,000
Oil City	300,000
Total	$331,600,000

This makes a total of three hundred and thirty-one millions six hundred thousand dollars, and is probably not far from facts. The statement, moreover, does not include the thousands of smaller sums and amounts, aggregating many millions more, that were deposited in the region for "safe keeping" by local speculators. But the above approximates a fair estimate of the respect in which the trade was held in the beginning. As to how money was squandered and fortunes blown to the winds, in the early days, that is a matter for future consideration. An estimate of the present capital places it at $135,000,000.

LASTING TERRITORY.

ONE of the most prolific belts of oil ever discoverd was that of Tidioute. It was only half a mile wide in the widest part and a few rods in the narrowest. It extended from Economite Hill to within a short distance of Watson's Flats, near Titusville. The character of the sand varied in quality and quantity. The earliest operations began in 1861 near the Allegany river, where the oil was found at a depth of 175 feet from the surface. Farther back on the bluffs the depth varied according to the surface until a depth of between 700 and 800 feet had to be punctured before the rich deposit was found. At Triumph Hill perhaps the best part of the belt was found, the sand having a thickness of 125 feet. Salt water troubled the wells more or less, and they were pumped from the start. Little or no glycerine was ever used, as the character of the pebbly sand forbade such treatment. Wells were drilled so close that you could walk the entire distance from Economite Hill to New London and Babylon on the steam boxes connecting one well with another. As high as $8,000 an acre was paid for land, and considered a good investment at that figure. Some of the old wells drilled twenty years ago are producing yet, although the number of producers are small and the daily production very little. The group located on Triumph Hill are the best oil wells in the world of their age. They are sixteen years old, and still average about five barrels a day.

PETROLEUM has been discovered in Gunnison City, Colorado.

THREE hundred and forty-five individual producers are operating in the Richburg field.

WELLSVILLE, N. Y., will soon have natural gas for light and fuel. It will be furnished by the Keystone Gas Company, who have a large supply obtained in the Richburg oil field.

WE are under obligations to the Brooks Oil Company, of Cleveland, O., for assistance in procuring the cut of Colonel E. L. Drake. The cabinet from which the cut was made was from Mrs. Drake, who also gave some of the important facts in the biographical sketch.

STATEMENT made by the United Pipe Lines July 10, 1880, and enlarged to November, 1881. It gives gross stocks, sediment and surplus, net stocks, outstanding balances, receipts (or runs) from all sources, and total deliveries:

	Gross Stocks.	Sediment and Surplus.	Net Stocks.	Outstanding Acceptances.	Credit Balances.	Receipts from all Sources.	Total Deliveries.
1877—April	1,895,153 71	77,386 70	1,817,767 01	449,640 14	1,368,126 87	200,570 81	125,797 90
May	1,762,602 64	75,363 87	1,687,237 77	683,663 71	1,003,574 06	493,200 58	619,612 26
June	1,596,367 68	81,255 42	1,488,112 26	661,786 57	826,325 69	538,906 95	737,609 77
July	1,482,433 51	81,741 50	1,400,692 01	667,166 36	733,625 65	615,145 46	699,476 18
August	1,489,052 53	81,144 63	1,407,907 90	643 281 46	764,626 44	673,403 04	666,144 28
September	1,339,032 27	67,163 68	1,271.868 59	552,676 26	719,192 33	625,225 37	760,745 57
October	1,434,728 78	46,771 99	1,387,956 79	673,850 05	714,106 74	687,094 59	570,092 71
November	1,691,399 52	39,418 00	1,651,981 52	657,591 36	994,390 16	913,644 19	649,242 70
December	2,830,413 36	68,729 63	2,761,685 73	754,338 25	2,007,347 48	1,656,150 37	506,322 99
1878—January	3,124,641 15	72,453 43	3,052,187 72	864,711 41	2,187,476 31	872,681 18	715,149 78
February	3,439,526 98	82.452 66	3,357.074 32	1,404,292 13	1,952,782 19	1,030,688 44	720,478 14
March	3.940,000 65	92,963 06	3,847,037 59	1,487,439 50	2,359,598 09	1,196,251 26	701,681 27
April	4,335,274 84	133,935 76	4,201,340 08	1,615,791 19	2,585,548 89	1,137,359 46	778,050 53
May	4,609,681 45	150,117 76	4,459,563 69	2,065,333 31	2,394,230 38	1,104,352 40	843,081 33
June	4,719,699 25	181,800 03	4,537,899 22	1,950,420 81	2,587,478 41	1,092,604 02	1,004,474 55
July	4,885,851 72	229,080 78	4,656,770 94	2,078,466 56	2,578,301 38	1,258,648 45	1,108,074 33
August	4,571,658 59	217,085 19	4,354,573 40	2.064,590 75	2,289,982 64	1,195,268 67	1,496,009 04
September	4,410,061 84	225,088 86	4,184,972 88	2,705,853 95	2,479,119 03	1,182,118 57	1,318,265 33
October	4,072,267 43	234,050 89	3,838,576 54	1,517,484 27	2,321,092 27	1,271,174 73	1,564,984 43
November	4,083,972 42	216,655 30	3,867,317 12	1,784,443 35	2,082,873 77	1,159 623 71	1,129,047 42
December	4,098,200 92	201,470 30	3,896,730 62	1,741,311 07	2,155,419 55	972.338 83	924,035 93
1879—January	4,759,031 41	182,707 80	4,576,323 61	2,153,763 83	2,422,559 78	1,231,237 19	546,271 74
February	5,157,646 15	171,689 80	4,985,956 35	2,340,238 22	2,639,718 13	1,055,377 95	643,828 71
March	5.503,768 71	190,797 91	5,312,970 80	2,484,861 83	2,828,088 87	1,363,512 17	1,029,029 70
April	5,885,675 24	211,957 06	5,673,718 18	2,644,301 36	3,029,416 82	1,379,349 76	1,015,482 04
May	6,180,843 53	315,992 98	5,864,850 55	2,522,846 36	3,342,364 19	1,488,514 31	2,228 043 27
June	6,426,802 45	334,457 29	6,992,345 16	2,959,921 12	3,132,424 04	1,437,250 90	1,204,557 54
July	6,419,699 08	323,295 32	6,096,403 76	2,323,575 29	2,772,828 47	1,472,651 01	1,465,518 05
August	6,380,606 63	302,345 15	6,078,261 48	3,581,224 03	2,497,037 45	1,714,620 11	1,728,940 81
September	6,589,859 83	325,363 85	6,264,995 98	3,783,480 38	2,481,015 60	1,691,863 41	1,455,811 45
October	6,701,209 87	299,393 67	6,401,816 20	3,788,155 65	2,613,660 55	1,646,725 06	1,502,991 20
November	6,951,133 67	303,641 17	6,647,492 50	3,927,300 18	2,675.192 32	1,600,961 29	1,328,621 19
December	7,362,409 76	294,571 37	7,067,838 39	4,235,459 40	2,832,378 99	1,771,781 24	1,331,822 12
1880—January	7,735,257 38	295,517 60	7,439,739 78	4,436,788 55	3,002,951 25	1,832,963 04	1,145,194 98
February	8,187,012 49	322,568 93	7,864,443 56	4,602,286 49	3,262 157 07	1,607,663 89	1,178,111 92
March	8,621,097 49	351,130 35	8,269,967 14	4,811,894 33	3,458,072 81	1,815,133 31	1,396,037 88
April	9,662,354 59	388,558 16	9,273,796 43	5,846,536 60	3,427,259 83	1,739,297 37	723,794 73
May	10,306,078 79	454,193 73	9,851,885 06	6,361,320 05	3,490,565 01	1,552,240 91	975,061 26
June	11,266,771 77	477,431 60	10,789,340 08	7,397,131 89	3,392,208 19	1,781,937 29	848,339 08
July	12,039,010 00	475,446 56	11,563,563 44	8,125,241 25	3,438,332 19	1,890,161 44	1,095,528 25
August	12,749,623 28	462,987 28	12,286,636 00	8,635,394 80	4,651,241 20	1,904,452 70	1,177,448 42
September	13,618,276 03	382,398 71	13,236,327 32	9,287,193 94	3,949,133 38	2,075,105 26	1,115,184 71
October	14,020,877 32	391,331 55	13,629,545 84	9,448,615 77	4,180,930 07	1,999.487 98	1,598,285 06
November	14,656,891 55	341,262 67	14,315,628 88	10,038,824 08	4,231,804 80	1,859,991 50	1,064,146 39
December	15,369,758 67	361,184 83	15,008,573 48	10,913,283 49	4,095,290 35	1,987.283 54	1 207,928 35
1881—January	16,291,307 87	360,688 98	15,930,618 89	11,672,583 61	4,258,035 28	1,876 526 50	931,818 71
February	17,355,485 31	391,616 47	16,936,868 84	12,029.594 35	4,934,274 49	1,823,713 46	781,745 93
March	18,488,476 94	432,304 19	18,056,172 75	13,099,262 44	4,956,910 31	2,222,812 39	1,116,695 11
April	19,560,752 23	517,422 38	19,043,329 85	13,846,285 20	5,197,044 65	2,182,636 96	1,183,779 02
May	20,591,177 33	640,662 03	19,950,455 30	14,608,124 70	5,342,330 60	2,278,582 78	1,356,688 23
June	21,397,698 53	756,412 85	20.641,285 68	14,738,828 77	5,902,456 91	2,318,445 18	1,545,448 13
July	21,982,161 42	774,402 94	21,207,758 48	15,150,267 23	6,057,131 25	2,396,472 50	1,756,044 15
August	22,474,105 51	800,343 33	21,673,762 18	15,240,553 15	6,433,209 03	2,527,888 69	2,013,844 67
September	22,727,740 61	820,434 43	21,907,306 18	15,626,283 11	6,281,023 07	2,233,085 37	1,900,251 83
October	23,212.951 99	801,243 43	22,431,708 56	16,408,030 46	6,023,678 10	2,452,428 66	1,803,052 62
November	24,945,987 13						

A CURIOSITY in the Gulf of Mexico has been discovered. It is a harbor in the open gulf, fifteen miles from land. A kind of oil is thrown up by the processes of nature, and rests upon the surface of the water in a thick scum. The effects of the oil is so great that even in the severest storms the sea in this peculiar harbor comparatively smooth. This is so well known that when a storm approaches small vessels run for this "oil pond," as it is called, and ride out the gale in safety.

THE exports of petroleum to Russia increased more than one hundred per cent. during the present year over last year's exports. These facts speak louder than any language can of the exaggerated stories told of the wonderful petroleum deposits said to be of such enormous proportions. The exact figures for 1880 were 1,024,632 gallons. The shipments thus far this year are 2,255,402 gallons. This is an encouraging future, and one of the hopeful signs of the times.

SHIPMENTS.

Shipment of Crude and Refined reduced to Crude Equivalent out of the Producing Regions in the years named:

YEAR.	January.	February.	March.	April.	May.	June.	July.	August.	September.	October.	November.	December.	Totals.
1859											500	1,200	1,700
1860	900	1,200	2,500	4,640	11,000	21,000	58,500	64,300	79,000	98,400	63,400	38,400	423,240
1861	4,800	49,620	68,410	95,300	184,000	189,000	200,400	210,000	263,000	184,000	76,321	75,282	1,653,333
1862	98,212	93,101	103,762	201,430	256,320	385,211	375,440	376,311	401,210	406,500	213,611	190,463	3,141,521
1863	171,132	104,928	148,388	288,994	456,211	428,282	213,413	281,400	398,211	264,441	281,340	206,211	3,243,651
1864													1,842,061
1865													2,100,132
1866													3,010,621
1867													2,883,210
1868													3,482,536
1869													3,613,621
1870	360,933	312,910	354,400	390,003	407,908	418,516	410,707	516,679	542,217	557,624	519,780	444,254	5,235,931
1871	437,691	347,718	383,890	389,147	587,375	501,754	541,137	528,134	551,075	505,071	480,977	410,822	5,664,791
1872	476,966	407,606	276,220	428,512	510,417	529,228	591,238	621,954	541,607	607,468	477,940	430,786	5,899,947
1873	573,124	527,440	668,374	708,191	768,176	696,414	814,449	864,768	952,955	1,010,852	959,589	955,443	9,499,775
1874	843,663	501,220	518,246	803,409	899,027	815,413	940,281	793,865	1,014,570	543,341	546,117	602,348	8,821,500
1875	435,095	327,776	693,918	729,581	681,679	745,986	904,537	882,089	1,109,392	871,917	671,066	871,902	8,942,938
1876	677,289	519,193	623,762	603,037	646,150	921,862	1,228,530	1,203,402	1,154,549	524,190	871,496	1,190,983	10,191,452
1877	743,461	484,904	913,919	903,526	1,234,324	1,391,124	1 096,951	1,425,943	1,563,797	1,268,971	1,205,634	600,019	12,832,573
1878	775,791	774,234	741,512	846,636	960,894	1,135,119	1,330,454	1,655,651	1,434,225	1,747,390	1,281,410	992,688	13,676,000
1879	663,998	702,729	973,879	1,136,188	1,331,469	1,369,314	1,625,035	1,808,238	1,627,120	1,662,269	1,453,645	1,542,585	15,886,470
1880	1,650,409	1,395,151	1,613,371	842,268	1,095,259	975,083	1,231,611	1,304,129	1,252,635	1,665,933	1,226,030	1,335,613	15,674,492
1881	1,061,617	915,028	1,276,740	1,348,398	1,563,436	1,729,697	1,925,532	2,214,877	2,31,950	2,080,467	2,099,641		

Figures for the spaces in blank are to hand, but were received too late for publication.

The above Shipment Table it will be seen commences with the first shipment by Col. Drake of 500 barrels in November, 1859. The labor and expense required to obtain the figures were of greater magnitude than anticipated. The table, though incomplete, will be found of great interest as, more than any other contained in the magazine. it indicates the steady growth of this important business.

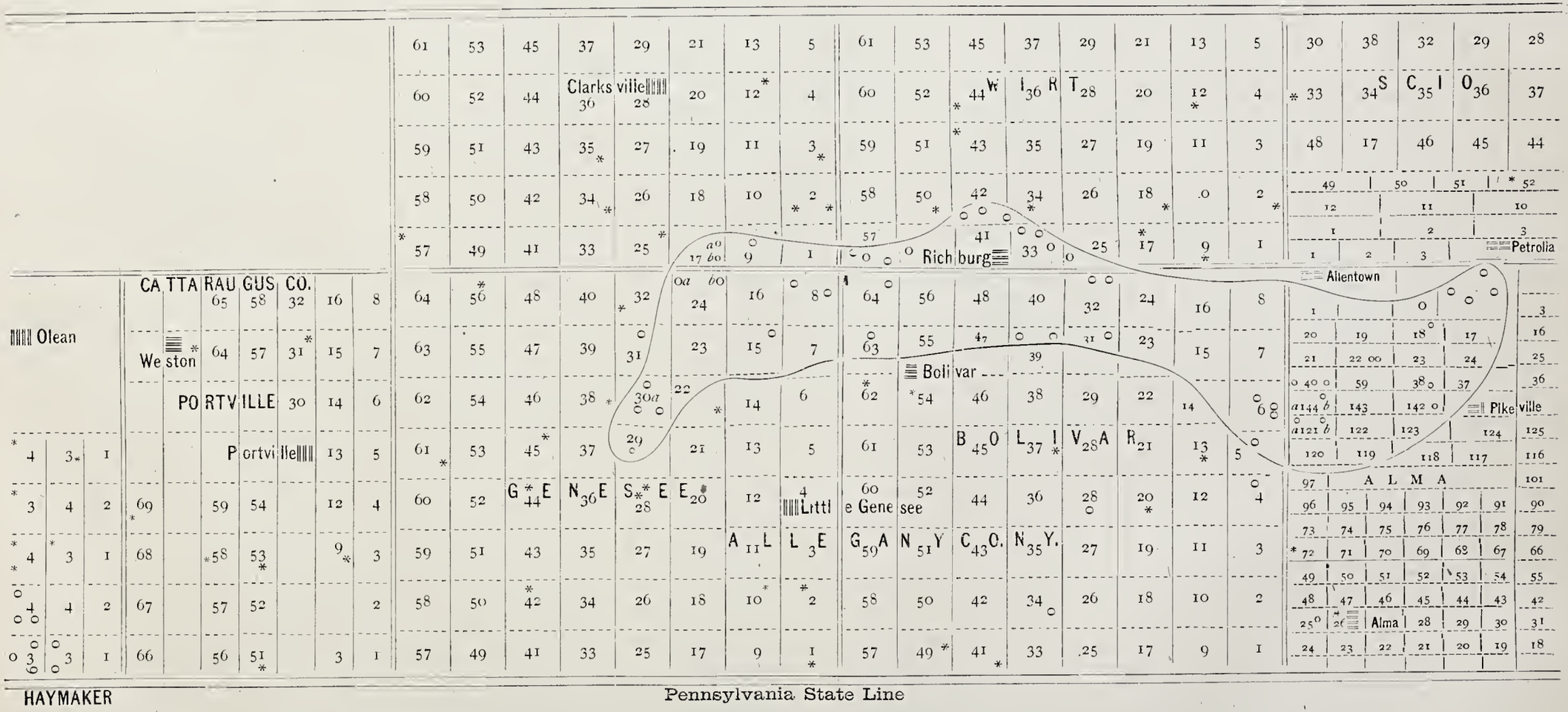
THE diagram of the Allegany Oil Field which appears on page 38 is the most correct, concise and comprehensive ever published of that important district. To Mr. Sanford C. Bailey, foreman of the STAR Job Room, is due the credit of its execution. But few can appreciate the difficulties attached to such a piece of intricate workmanship.

AT Forestville, Chautauqua county, N. Y., a well has recently been drilled, in which was found a speeies of sand rock which contained a small quantity of an illuminating oil. It is light amber, but is found in such limited proportion as to preclude the possibility of opening a paying field.

THE second number of THE AGE will appear between January 1st and 5th. No effort will be spared to make each succeeding number of increased interest.

THE Forest Oil Company is supposed to be the largest individual producer of oil in the region. It is said to be the owner of nearly 400 wells, many of which are located in Bradford's superior territory.

DIAGRAM OF THE ALLEGANY COUNTY, N. Y., OIL FIELD.



EXPLANATIONS TO DIAGRAM.

COMMENCING near the toe of the foot, we outline the oil deposit as at present developed, giving the character of the wells along the line. Follow the lower line from left to right and around to starting point.

GENESEE.

Lot 28, Two dry holes, Buffalo parties and N. C. Clark.
29, Small pumping well, Willets Brothers, 5 barrels.
30, *a* Bennie & Wales, pumping well, 8 "
30, *b* Zeigler & Smith, " 15 "
22, Willets Brothers' well, nearly dry.
15, Pumping well, Painter Brothers, 10 "

BOLIVAR.

Lot 63, Vandergrift well, nearly dry.
54, Kern & Co , dry,
39, *a* Lockwood & Co., 25 barrels.
39, *b* Malory & Co., 15 "
31, Fisher Brothers, 10 "
14, Campbell & Allen, drilling.
5, Elliot & Giles, four months old, 15 "
6, *a* Williams, 20 "
6, *b* Chambers, 10 "
13, Duke & Norton, dry.
4, John Fagundas, 2 "

ALMA.

Lot 121, *a* Downing, 15 barrels.
121, *b* Hefferman & Co , 12 "
144, *a* Prescott & Co., 15 "
144, *b* Rathbone, 12 "
144, *c* Elliot & Giles, 5 "
145, O. P. Taylor, 4 "
3, " 3 "
35, Belemy & Noble, dry.
26, Wycoff farm, Taylor, dry.
6, Taylor & Co., dry.
4, Taylor Triangle, 4 "
4, " 8 "

SCIO.

Lot 4, First Triangle well, 1 barrels.
9, Haymaker, dry.
3, J. H. Bush, dry.
2, Nameless Oil Company, 3 "
52, Longabaugh, dry.
33, Murry & Co., dry.

WIRT.

Lot 2, Moran & Rice, dry.
9, Roach & Duor, dry.
18, Kittenger & Johnson, dry.
12, Kittenger & Johnson, dry.
17, Baum & Son, dry.
25, Coast & Sons, 22 barrels.
33, *a* Mattison & Wallace, 10 "
33, *b* Old Richburg well, 20 "
33, *c* Knox No. 1, 15 "
33, *d* Knox No, 3, started at 150, now 18 "
34, Wellman, Williams and others, three dry wells
42, Boyle No 3 dry, No. 1 started 250, now 20 barrels.
42, Boyle No. 2, doing 10 "
41, Northwest corner, Kittenger & Co., dry.
43, Harding, on West Notch, dry.
44, Wilcox & Wheeler, dry.
41, Nillage of Richburg.
49, Richardson & Jones, started 200, now 50 "
57, *a* Lynch & Snyder No. 1, 40 "
57, *b* Kittenger & Johnson. 10 "
50, Evans & Thompson, dry.

CLARKSVILLE.

Lot 2, Willets Brothers and Painter & Cyner, both dry.
12, Hays and others, dry.
35, Colonel Hicks, dry.
34, Gilchrist & Proctor, dry.
3, Richburg & Friendship Oil Company, dry.
25, Hays & Parks, dry.
17, *a* Parkman well, 10 barrels.
17, *b* McManus & Beaumont, 6 "
9, Gilchrist & Co., 10 "

GENESEE.

Lot 24, *a* Lockwood well, 4 barrels.
24, *b* Book & Rhodes, 15 "
32, Calhoun & Barton, dry.
31, Kittenger & Johnson, almost dry.
38, N. C. Clark and Brett, dry.
45, Vandergrift, dry.
44, Cass Brothers, dry.
61, Deer Creek, dry hole.
42, Canning & Howard, dry.
56, Briggs & Morris, dry.

BOLIVAR.

Lot 37, O. P. Taylor, dry.
34, Waugh & Porter. 6 barrels.
49, Moonlight Oil Company, dry.
41, Workman, dry.

GENESEE.

Lot 2, Perkins & Co., dry.
1, Horse Run well, dry.
10, N. C. Clark and others, dry.

ALMA.

Lot 26, Wycoff farm, Taylor, dry.
72, Schoff farm, Taylor, dry.
111, Fletcher, dry.
25, Phillips, dry.

PORTVILLE.

Lot 53, Unknown, dry.
58, Kern & Co., dry.
9, Olean parties, dry.
69, Swett & Co., dry.
56, Crooker & Co., dry.
31, Haskell farm, dry.

WESTON'S MILL.

Unknown, dry.

OLEAN TOWNSHIP.

Eight dry wells drilled by various parties.
One on Weymouth Brook.
One on Keller farm.
One on Wheeler lands by John L. McKinney & Co.
One by George V. Forman.
One by Austin & Co., Two Mile Run.
One by Nelson & Co.
One by Conley & Cook, Cook farm.
One by C. B. Williams & Co.

Lots 8 and 16 have the largest wells in Genesee; 64, 56 and 32 in Bolivar, and 57 and southwest corner of 49 in Wirt.

The squares on the map are three-quarters of a mile either way.

PETROLEUM EXPORTS.

THE exports of petroleum from the port of New York, for the three days ending December 6, amounted to 4,321,238 gallons. The total exports of refined, crude and naphtha from all American ports from January 1 to December 2 were as follows:

	1881. Gallons.	1880. Gallons.
From Boston	10,210,497	4,621,300
Philadelphia	100,311,865	51,862,028
Baltimore	17,133,948	15,106,318
Richmond	215,484	1,302,064
Total	127,871,794	72,891,710
From New York	338 392,285	242,799,491
Total exports from U. S.	466,264,079	315,691,201

IT is estimated that about sixty thousand barrels of oil daily will be required to supply the world's demands for 1882. Five years hence, therefore, it may become a difficult matter to find resources sufficient to satisfy the needs of the trade.

WELLS COMPLETED.

TOTAL NUMBER OF WELLS COMPLETED EACH MONTH IN THE YEARS NAMED.

A. D.	Jan.	Feb.	March.	April.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.	Total.
1870	131	131	114	135	164	182	161	156	135	144	112	79	1,639
1871	98	68	70	81	95	150	139	116	125	186	161	82	1,472
1872	48	118	98	122	130	98	131	117	96	101	42	101	1,201
1873	100	105	105	110	106	280	112	116	116	111	108	95	1,311
1874	108	111	108	110	112	113	124	102	108	113	112	118	1,341
1875	184	186	194	180	169	194	208	206	208	215	213	228	2,341
1876	235	236	248	207	200	258	243	274	213	270	278	271	2,945
1877	275	249	296	264	336	598	314	254	332	460	398	391	2,962
1878	279	238	202	411	468	278	210	180	176	232	241	169	3,084
1879	144	136	221	263	395	336	335	280	269	229	225	268	3,104
1880	311	238	358	494	435	315	339	359	359	360	334	309	4,211
1881	232	218	201	310	412	371	348	335	314	302	---	---	----

PRODUCTION TABLE.

SHOWING THE TOTAL YIELD OF THE PENNSYLVANIA OIL FIELD FROM SEPTEMBER, 1859, TO NOVEMBER, 1881.

Years.	Jan.	Feb,	Mar.	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Totals.
1859									10	15	18	28	2,188
1860	30	50	89	215	500	1000	2000	2500	3000	3500	2000	3000	547.489
1861	3201	4041	4800	5400	6000	6100	7100	8500	7000	5150	5514	6716	2,147,562
1862	6000	5300	7400	8000	9400	9000	8500	11000	13000	10565	8053	7238	3.104,200
1863	6200	6400	7000	5500	6000	7603	9022	8100	9200	7120	11500	10260	2.700,100
1864	8100	6300	4500	5000	7000	5100	5600	5700	7180	5545	10100	10320	2.220 250
1865	5900	5800	5000	7500	8000	8000	7400	6350	6400	6800	7600	10900	2 560 600
1866	9200	9100	5000	7100	8100	9500	9350	9440	12000	10400	11000	11165	3,441.000
1867	10900	8100	9000	10100	10500	9000	10100	10000	10100	7660	9155	8313	3,458.000
1868	8200	9400	8100	9300	11000	12400	13000	11800	10250	8225	8000	7150	3.540,100
1869	8100	8500	10000	11000	13000	13000	13560	14000	13600	13000	11200	10625	4,225.000
1870	11348	11802	11509	12400	15990	13400	13800	15950	18203	18000	17061	15990	5,288,950
1871	13500	13300	13082	12950	13054	13882	14900	15866	15555	15889	15599	15841	5.275.581
1872	17943	17894	15680	16221	17402	12140	16933	17440	16598	18450	25942	20630	6.397.174
1873	20550	21460	21830	22260	24632	26361	23406	30900	32500	31343	33584	34680	10.005,049
1874	32000	30940	29760	28104	29442	31222	33987	32000	29461	29944	29231	28101	10,817,250
1875	27900	26509	26012	23009	23000	23805	24991	23940	23800	23900	23821	23594	8,675.966
1876	23102	25440	23560	23800	24628	24400	24890	25300	25900	26400	26500	25900	906,490
1877	26930	27560	28860	32060	36000	37440	39210	42100	41321	41200	39900	40120	12.919.130
1878	39200	39900	39200	40100	41111	40820	41200	42900	43999	44880	45200	43900	15.251,461
1879	44000	44830	47960	50810	52911	55600	56911	59940	61498	60980	58750	58231	19.851 903
1880	59982	63890	66215	68063	72080	73104	73794	74980	71941	77491	76112	74080	26,266,982
1881	73030	69060	73900	75245	79000	82460	87900	79100	78231	77971	77892		
Total twenty-one years to December 31st, 1880													149.602,375
Total for eleven months for 1881													

NEARLY twenty-five million dollars' worth of oil is held in storage tanks in the oil country.

THE village of Limetone, N. Y., is situated about six miles north of Bradford. Here the first discovery of oil in what is known as the northern field was made. This was accomplished by Mr. Job Moses, of New York, in 1865, and one of the wells sunk at that time has produced a small quantity of oil ever since. In the vicinity some large wells were obtained during the excitement which followed in after years. At present the wells are nearly all pumped and are very small producers, salt water being obtained in abundance.

THE mechanical work of THE AGE was performed by the *Star* Publishing House. The average reader will doubtless be favorably impressed with the appearance of the magazine, as well as surprised that a Bradford house could turn out such a perfect specimen of this species of publication. We are, therefore, under obligations to the house for the efforts made to fully satisfy us in this particular. We consider it very creditable indeed.

AN oil well is now drilling in the Wyoming valley, Wyoming county, this State. It has reached a depth of 1,000 feet, and will be completed this month.

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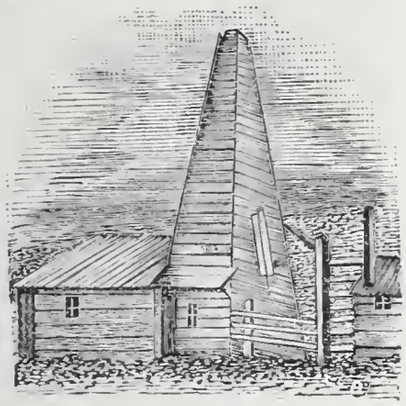
Star Office, Bradford, Pa.

THE PETROLEUM AGE.

Vol. I. BRADFORD, PA., JANUARY, 1882. No. 2.



THE ORIGINAL DRAKE WELL.

PETROLEUM.

CHAPTER II.

THE history of Colonel Drake's life up to the date of the grand achievement which marked a new era in American industry, constituted the first chapter in the history of petroleum developments. As related in the December AGE, the Drake well was completed on Saturday, August 28th, 1859, at a depth of 70 feet. The well was situated near the junction of the waters of Pine with Oil Creek, about one mile below Titusville. At that time Titusville consisted of a few buildings surrounding a country store kept by a man named Titus. There were also a blacksmith shop and a few other industrial establishments. The soil of the country surrounding was somewhat productive; and, as in all rural communities, the people were enjoying the natural results of their daily labors without anything to disturb their peace. Religious services were held in a school-house, which stood near the site of the present building, once in two weeks, and the inhabitants for miles around came to hear the "preacher" on the Sabbath day.

While quietness reigned throughout the valleys and surrounding hills, decked with the garb of nature's most complete and perfect outfit, Colonel Drake—the insane man, as some termed him—was urging the drill on Oil Creek, about one mile from the village.

When the news reached the store—the centre of gossip for the community—that "ile" had been struck, it was received with a certain degree of doubt. It was of sufficient importance, however, to cause the greater part of the population to rush to the scene with great haste. True enough, the crude bailer, or "sand pump" as it was then called, brought up a quantity of crude petroleum every time it was run. The appearance of the liquid in such abundance caused the most intense excitement. Colonel Drake did not put in an appearance until Monday morning, and, it is needless to add, felt highly elated over the success attained. But the ruralists came from all points of the compass during Sunday, and every day following for a week the flat surrounding the well was the scene of an army of sight-seers. It was a new "dispensation." Oil, it is true, had been found in other wells which had been drilled for salt in the Tarentum region, but the fact of drilling and obtaining a full-fledged oil well was more than the people were prepared for. The visitors to this remarkable prodigy were not confined, by any means, to the residents of Titusville and vicinity. They came in response to the circulation of the news, which ceased not to travel until the farther ends of the nation had heard of the wonderful discovery. "Rock oil" had been advertised as a *cure-all* throughout the country to a considerable extent by S. M. Kier of Pittsburg, who procured it in some quantity from salt wells which were then in operation along the Allegany river above Pittsburg. According to Mr. Kier's advertisement, the lame were made to walk, the blind to see, the deaf to hear, and the dead were made to stand forth and give attention! This scheme, however, while there was some money in it for Mr. Kier, was looked upon by the intelligent classes as a speculation of a fanatic or an imposter; and petroleum, instead of receiving the attention it should have done at the hands of men of science, was for years almost totally neglected. There seems, however, to have been a time for every thing, and a *man* for the time, and this was fairly demonstrated in the development of the mighty petroleum resources of the great Keystone State. When Colonel Drake arrived on that bright and glorious Monday morning of August 31st, 1859, at the fountain he had opened for the illuminating uses of mankind, he little dreamed of the magnitude of the

development. Had he appreciated its importance, as it would appear most any other successful discoverer would have done, he doubtless would have acted differently on that occasion. While others strove with great energy to obtain leases of farms along the bed of Oil Creek, Mr. Drake seems to have been perfectly satisfied with his possessions as they were that morning. These consisted of a ninety-acre lease surrounding the well, at one-eighth royalty, and the well itself. The country lay before him ; and, had he been so disposed, he could have been monarch of all he that day surveyed. Had he looked out into the future with a prophetic eye, and seen even a portion of the grand results that were to follow ; had he beheld himself as the discoverer of an article of commerce greater than all others of which the nation boasted, with two exceptions–cotton and breadstuffs ; had he foreseen, even dimly, a few of the results of the establishment of a mighty industry which was to command hundreds of millions of dollars, furnish business for hundreds of business men, and employment for thousands ; had he been able to calculate the wild extreme to which the fever of speculation in the article, and in the ground from which it was produced, would run ; the fortunes that should be made in a day by laborers as well as capitalists ; the great strides that should be made to monopolize territory, production and certain other departments of the industry by immense and wealthy corporations ; and, finally, a producers' council (which failed of its object), it would seem that Colonel Drake would have stepped out on that memorable morning to become "King of the Oil Country" by seizing every opportunity for aggressive enterprises. But he didn't!

The land whereon the well stood had been secured from the "Rock Oil Company," which was composed of a dozen stockholders, mostly Eastern men. Their names were : George H. Bissell, J. G. Eveleth, Asahel Pierpont, Prof. B. Silliman, Jr., John Hanna, James M. Townsend, Henry L. Pierpont, E. Brewer, William A. Ives, Brewer, Watson & Co., Eveleth & Bissell, and Edwin B. Bowditch. The land was originally the property of Brewer, Watson & Co., who received $24,000 for ninety acres from the association above described, and the firm to have 1,200 shares of the stock, which was held at two dollars a share. The parties comprising this company—especially Brewer, Watson & Co, and Bissell & Eveleth—lost no time in procuring all the property possible along the valleys of Oil Creek, and the beds of its tributaries even descending and ascending the Allegheny river below and above Oil City. Jonathan Watson, at 8 o'clock on the Monday morning after the strike, stood at the door-steps of W. H. McClintock, of the McClintock farm on Oil Creek, where it was known that an oil spring existed similar to that which guided Colonel Drake in his selection of a site. He was there to buy or lease the farm, and succeeded, partially at least. We are now at the starting point in the wonderful drama that has been enacted before the eyes of many who are still occupying a prominent position in the petroleum world. The innocent cultivators of the soil not apreciating the circumstances, leased their farms at a moderate advance from their original soil value. It would appear also that the school privileges of the valley were not at least what they boast of at the present time. It was difficult for the average citizen to determine which was the greater quantity, a fourth or an eighth division. In some instances, it was true, the latter was accepted by the farmer as the greater, and it was taken as a basis for the terms of oil leases given to the schemers, in which the country largely abounded. During the fall and winter months operations moved exceedingly slow. The Drake well was properly tubed and produced 25 barrels, but soon settled to 10 barrels per day.

The second well sunk in the vicinity was owned by Barnsdall, Mead & Rouse. This well was tested at the depth at which Drake found his supply, but no satisfactory results occurring, the drill was urged another 100 feet, when a vein of oil was encountered that yielded 40 barrels a day. This occurred about the first of March, 1860. Meanwhile the people residing along the Allegheny river, at and below Oil City, began also to explore for the precious liquid, and shortly after the striking of the Barnsdall, Mead & Rouse venture, Evans and others of Franklin succeeded in obtaining a fifteen barrel well on the Evans farm, upon which a portion of the city of Franklin now stands. This was the well which gave rise to the expression, "Dad has struck ile," and was made the subject of a poem by a local aspirant soon afterward. It appears Evans had a daughter at the time who received the attentions of a young man engaged as a driller on another well in the vicinity. When her *dad*, who was the leading stockholder in the well, and also the owner of the land upon which it stood, became an "oil merchant," the daughter considered it beneath her dignity to associate with a man who was compelled to earn

his bread by the sweat of his brow, notwithstanding the injunction of the Good Book, and so informed the young man at his next appearance. It is said that the bold young hero, instead of proceeding to some dark alley and enlarging his brain capacity by ushering into it the light of day with the use of a Smith & Wesson No. 6, retired to his room and complacently indited a communication, ending with the familiar oil region term, "Go to h—l!" It is not related whether she obeyed the impious injunction or not, but we are informed that the same driller became very rich soon after this episode, much to the disgust and chagrin of the foolish female.

It will be remembered that all the drilling thus far accomplished was by the kicking process. Then there were no engines or machinery such as is used at the present time. A large spring pole with the but end cabled to the earth, and the centre resting on a post ten feet high, formed the jar function now performed by the walking beam. A Tidioute company, whose record has been lost, is credited with having used the first engine and boiler in sinking an oil well. This was accomplished some time in the spring of 1860. The machinery, however, soon came into general use. It is impossible, from the meagre records obtainable, to give a correct idea of the progress of developments during the first two years, There is no historical work extant which pretends to give detailed accounts, and we are compelled to gather notes from those who still reside in the vicinity where each important development occurred.

The third well ever started in the region was owned by Brewer, Watson & Co., and was located on the farm of W. H. McClintock near Rouseville, where, as stated, there existed an oil spring from which petroleum had exuded for ages. The spring of 1860, however, witnessed great activity on Oil Creek all the way from the Drake well to its mouth. Every farm became a scene of from one to a dozen wells. There were some things lacking, however, in the rush of business in those days. The delicate puff of the steam engine and the delightful music of escaping steam and rattle of bull wheels were sadly deficient. It is estimated that 200 of the original wells were drilled by the use of the spring-pole. But while this was a cheap method and answered the purpose of sinking wells to the depth of from 100 to 200 feet, it did not serve the purpose when it became necessary to drill to lower depths. It has always been characteristic of sections of Oil Creek to produce what is termed surface oil in considerable quantity, and to this, perhaps, may be ascribed the important result of Drake's initial venture. No better site for the first oil well could have been selected than Titusville, for even at the present day there frequently occurs an outbreak of excitement over some fresh discovery of oil near the surface in that vicinity. Within the five years past there have been two of these outbreaks, one at the junction of the enterprise with the Pleasantville road and the other near the Pittsburg, Titusville and Buffalo railroad depot. The latter occurred during the present year. This slush oil is found from six to ten feet below the surface in a loose gravel, but as regards its origin or the cause of its appearing at the altitude at which it is found nobody seems to have a distinctive understanding. It offers no argument in favor of petroleum being a purely vegetable production, as there has been nothing found, even so near the surface as this, that would lead to such a conclusion. But, as we have the results and the facts before us, it is with them we have now to deal.

In these early days "surface indications" were taken as a guide to success in locating oil wells. The territory considered first class was that which was broken by ravines, and as a rule water courses were possessed of superior attractions. For this cause no person in the early years thought of climbing the hills skirting the Oil Creek valley for the purpose of sinking an oil well. And, moreover, as the name of Oil Creek had a great deal to do with its credit as a guide to the oil deposit, the lands through which it coursed were all considered of prime quality. It would perhaps be useless to give in detail the list of farms that, within five months from the date of Drake's strike, became the scene of the most active operations. The oil was generally found in the first and second sands at depths ranging from 180 to 250 feet. It was not until June in the year 1861 that the third sand and its immense quantities of petroleum were discovered. Of this, however, we shall speak in the proper place. We find at the present date of developments—February, 1860—that nearly every farm from Titusville to the mouth of Oil Creek had passed into the hands of speculators, either by lease or purchase, and work was progressing in the most approved manner. In June of the same year there were seventy-five producing wells in the country and the daily yield amounted to nearly a thousand barrels. In the work we find the names of many men who are still directly or indirectly

interested in oil and its products. Among these are Jonathan Watson, Dr. Brewer, J. G. Angier, R. D. Fletcher, S. Q. Brown, John Mitchell, W. Crossley, George H. Bissell, J. L. Carnagan, Phillips & Co., Dalzell & Emery, Barnsdale, Funk, Kerr & Watson, Ackley, McMullen, Parker, McCaslin, Spaulding, Stewart, Noble and many others. The completed list extended all the way from Franklin to Titusville. At the latter place seven wells were pumping on the first of July, and there was great excitement in all that neighborhood. It was particularly wonderful how the people from abroad flocked into this new world of adventure. Its fame spread equal to that of California in 1849. Capitalists were numerous, and during the eight months ended July 1, 1860, it is said over one hundred millions of dollars were closeted in oil lands along the line of Oil Creek and the Allegany river. During the first four months Col. Drake disposed of his product at from $18 to $20 a barrel. Samuel M. Kier, of Pittsburg, and Scheifflings Brothers, of New York, by agreement, took all he could produce at these prices. Kier's portion was small and he paid fifty cents a gallon. On the striking of the Barnsdall well, however, prices began to drop under the apprehension that the world was likely to be flooded with petroleum. The Barnsdall well was yielding forty barrels a day and the Drake ten barrels, with no indications of a serious decline in the immediate future. The producers of that day and those who were such in prospect began to trouble themselves in regard to the resnlt of so much drilling, and the "shut-down" policy was urged by numerous cranks who infested the region from the beginning. It would be impossible, they said, to find a market for the product, and when, if the market should drop to $5 or $6 a barrel nobody could afford to operate. Notwithstanding these croaks, business went on and wells went down in great haste, bringing the production of the country up to nearly 3,000 barrels a day on January 1, 1861. In the sense of a probable demand with increased production, the croakers were correct, for at the date just named the article brought less than $2 a barrel of forty-three gallons. It seems almost incredible that, with the conveniences or inconveniences for sinking wells in those days, the first year's work should have produced such wonderful results. The greater part of the wells were "kicked" down by spring-pole, as above stated, and yet the system proved of great value to many men of limited means. Hundreds of instances are known where even boys under the age of twenty-one years acquired large fortunes by this process. A lease being secured, a couple who perhaps had never heard of or seen each other forty hours prior proceeded to the amalgamation of their capital, which, properly compounded, consisted of several hard days' work, with a view to boring for oil. Sometimes it required more than an ordinary amount of cheek to procure the necessary tools, but these in hand, the remainder was easily calculated. Unlike the present day, oil was expected every time the tools succeeded in capturing a crevice from the top to the bottom of the hole. Every well started by no means attained the result desired by its projectors. On the contrary, there are hundreds of these initial ventures to be found in all parts of the country that are choked with iron. If all this stuff were removed and stretched in one continuous line it would cover the entire length of the oil regions. Drilling oil wells has undergone a most wonderful change. From tools that would not exceed 500 pounds in weight; the main stem being but 10 or 12 feet in length and of 1 1-2 inch iron, the contrast with the ponderous implements used at the present day is very striking. An ordinary set of tools of the present day weighs 4,000 pounds, and the auger (or main) stem is 40 feet in length. At the present time no wells are reamed, whereas in the earlier years, and in fact up to the days, of the Bullion excitement, it was considered as important a necessity to have a reamer in connection with a set of tools as a bit.

But the character of the tools is here mentioned to give an idea of the difficulties the operators of 1860—the year of the dawn of cheap light—had to overcome. Notwithstanding all these obstacles, the production of the year averaged nearly 1,500 barrels a day. It will be seen, therefore, that there is but little change in the average oil man in twenty-one years. He started in at that time, a boy comparatively speaking, and when of age had learned bnt little as regards the art of "stopping the drill." The first years' experiences were very numerous and of great value. Wild speculations were indulged in which caused immense losses to investors from the various surrounding cities. A mania existed for the organization of stock companies, and these became so numerous that nearly every man possessed of sufficient money to obtain a share, carried a certificate of stock larger than a belladona plaster, and folded with the greatest care. These certificates were

usually printed in the highest style of the art, and looked equally as well and valuable as any gold-bearing bond ever issued by Uncle Sam. As a rule, the organizer of the company was the only man who ever realized profits from investments. His capital consisted in the capacity of his brains to misrepresent facts. There are hosts of men in the region to-day who are carrying relics of these delusions, and never fail to denounce somebody as a swindler or rascal when, in the course of human affairs, they happen to come across them among their filed documents. But, as this business was only in its infancy at this stage of proceedings, we pass it for future reference.

The year 1861 opened with oil at less than $6.00 a barrel at the wells, and before the close of the first quarter it had dropped to $1.00 a barrel, with production something less than 3,000 barrels a day. Operations along the valley were increasing with considerable rapidity. Nothing of great importance occurred until the 6th of June, when the first third sand well of the world was struck. This was called the "Fountain well," and was located on the Funk farm, just above Petroleum Centre, on the Oil Creek flat. This was also the initial "spouter" of the world, as it gushed forth at the rate of 500 barrels a day without the use of sucker rods or pump. This was a new departure; and. as may be imagined, caused the eyes of the oil trade to open wider and wider.

THE BRADFORD OIL COMPANY.

THIS Company was organized under a charter on the 20th of April, 1876, with a nominal capital of $32,000. The charter was obtained not for the purpose of disposing of stock, but more particularly for the convenience of the Company in the transaction of its business. Prior to the date of the organization under the charter the business was transacted in the name of Chambers, Jones & Co. The principal stockholders under the new regime were J. T. Jones, Wesley Chambers, L. G. Peck and L. F. Freeman. The organization was effected with Wesley Chambers as President, and having large and valuable estates throughout the Northern Field, it increased in prosperity to a very satisfactory degree. The company owned a large portion of the land upon which the city of Bradford stands, from Main street south, and from sales of city lots, it realized $40,000. The company now owns about 10,000 acres of land throughout the Northern Field and Allegany county, New York, all of which is held in fee simple except 200 acres, which is held at one-eighth royalty. It has 100 producing wells, which yield about 5,000 barrels of oil daily. Aside from these, it has disposed of about 100 wells to various parties. These were located at Four Mile, Indian Creek, West Branch of the Tuna Creek, and other places throughout the field. The property still retained by the company is very extensive, and the shares of stock are valued at $2,000 each. In February, 1879, Wesley Chambers disposed of his interest in the concern to J. T. Jones, Esq., and in June following resigned his position as President. Mr. Jones was elected in his stead. Messrs. Peck and Freeman also sold their interests to Mr. Jones on March 9th, 1881, and resigned their respective positions as Secretary and Treasurer. Mr. H. E. Brown, attorney of Warren, was elected to the former, and T. J. Powers to the latter position. The company and its members have been among the foremost of operators in developing the treasures of the great "Northern Basin," and the prosperity that has attended their efforts is mentioned with much satisfaction. The company has always maintained a high standing in the business relations of the oil country.

The firm of Mitchell & Jones is an off-shoot of the Bradford Oil Company, though only as to individual ownership. These gentlemen own 900 acres of land in the field, and have 60 producing wells, with a royalty of one-quarter from 40 others. They obtain 25,000 barrels of oil per month.

Since cutting loose from the Bradford Oil Company, Messrs. Peck and Freeman have pushed operations in their own interests, and own 500 acres of good territory in fee, besides 125 acres leased at one-eighth royalty. They have 50 producing wells, which number includes six recently completed on a 100 acre tract in the Allegany field.

Brown & Jones, another off-shoot of the Bradford Oil Company, own 125 acres in fee on the head waters of Kendall Creek, with 25 producing wells.

MESSRS. RICE & ROBINSON, of Titusville, Pa., are engaged in the production of steam refined and filtered carbon lubricating oils. They have a capacity of two hundred and fifty barrels daily. The trade in heavy oils is on the increase, and this firm have inaugurated a prosperous business.

"AN OIL MAN."

WHEN the term, "he's an oil man," is appropriately applied, it usually conveys an impression of dignity or superiority. There are, however, various grades or specimens of this class of business men, and to recount or rehearse their characteristics would only tend to lead the mind away from the subject of this "discourse." The "average oil man" is, therefore, selected as the central figure in the picture proposed to be drawn.

In the first place, he is a peculiarity. He is stuffed so full of creditable traits of character that it seems like heaping virtue on by the ton to enumerate and describe them. For pure and exalted manhood he perhaps has no superior among men. He is always ready to perform an act of kindness, and with a person in distress he will divide the last dime, even on the verge of departing on a journey. He is usually cheerful, never grumbling with his lot whether fortune smiles in beams of unmeasured delight or misfortune gnaws at the vitals of his financial existence. He is the most reckless individual on the face of the earth in the use of money in enterprises of chance or hazard. He will plunge into a speculation with less consideration than any other man; and, if a loser, will laugh as heartily as when gainer. He is a very considerate mortal for those in his employ or those dependent upon him for sustenance; and, whether he expects recompense or otherwise, they are cared for, in an emergency, as the nearest friend would be. He is the most genial of men, and is always in an apparently healthy state of mind. It may be possible that he is unable to-day to meet all the requirements and obligations demanded by business affairs, but he is never swerved from the straightforward course. He pushes ahead as if nothing had occurred to mar his peace or disturb his equilibrium. He greets all men alike, taking the rich or the poor, the elevated or the depressed, in the same hand and in precisely the same manner. He is *always* "glad to see you," whether he is indebted to you or not. When necessary he treats night as day in pursuing a course he may have mapped out, and in "doctoring" a sick well will lose more rest and sleep than an ordinary man would care to lose for the restoration from the gateway of the tomb of his mother-in-law! Of his personal appearance he is rather particular, though during the same day he may be seen with rubber coat and boots thoroughly checkered with mud, and again rigged out in the most costly apparel. He is rather fond of a display of gold and diamonds, though not to excess. He is honest to the letter, and would spurn to defraud a man out of one cent. At the same time, he frequently acquires "accounts against him" which he cannot meet; and yet, to accuse him of dishonesty might incur the penalty of asking his forgiveness on the spot, as he is a man who will defend his honor and integrity with his life. He is always true, and when converted into a hitching post never fails to prove himself of the substantial order. For charitable purposes he bestows richly of his gains. Wherever he resides in Oildom traces of his benevolence are quickly discovered. Tall church spires and cathedral domes, together with school-house belfries, are a few of the decorations seen at a distance by the tourist in going to his place of residence. He is a lover of justice, law and order, and is a gentleman under any and all circumstances. His word is of equal worth with his bond, and he tries to his utmost ability to protect both. Thus you find the average oil man, though with regret it must be confessed that all claiming the title are not of this stamp. The majority, however, are typical of our portrayal.

A STRANGE COINCIDENCE.

IN 1864 J. Wilkes Booth, the great actor, and assassin of President Abraham Lincoln, purchased a one-thirteenth interest in the Homestead well at Pithole, paying therefor $15,000. The interest was afterwards bought by Mr. Jo H. Simonds of this city. The well, though small when compared with its contemporaries, was a fair producer, as it yielded twenty barrels a day. On the very day that the unfortunate "crank" shot the great President the well caught fire, and everything connected with it was consumed. On the morning following the dastardly deed, when gloom had expanded its unpleasant pinions until they covered the greater portion of the earth, the well was visited by a large number of people, who seemed to agree as to the providentiality of the coincidence. Of course it is humanizing the Creator to ascribe such proceedings to Him; but, at the same time, it is impossible for human minds to otherwise interpret the source of such results.

SOUTH AMERICA uses only 1,000 barrels of oil a day. When the war (which is now troubling that unhappy country) is over, there ought to be a large increase in the demand.

USES OF PETROLEUM.

PETROLEUM enters largely into the manufacture of nearly all of the more common oils. Even the lard oil trade seems likely to suffer more or less at its hands. Aside from the illuminating and lubricating qualities of petroleum, it has a thousand others which are daily enlarging their demands for stock. It has been well known for a few years past that it has been used as an alkali in forming most elegant soaps, and general toilet mixtures have been manufactured from petroleum products, and even hair restoratives of excellent quality are compressed from it. But there are still other and perhaps greater sources than these for its consumption, and this remarkably lengthy season of over production has had a tendency to force it upon the tradesmen in all parts of the world. Its cheapness has accomplished much more than those who produce it are aware of in the matter of new uses. In Europe, however, which seems a peculiar circumstance, nearly all of the new methods for its utilization first appear, and especially so among the French. It is said that there are hundreds of dealers in patent medicines who are reaping large fortunes from the sale of petroleum products as ingredients of their mixtures. It is possible, if not probable, that it will yet take the place of many of the compounds administered by regularly authorized physicians in the sale of skin diseases and rheumatism. But the latest phase of this rising moon, as seen from a French standpoint, is in its constituting a very effective stimulus. By it the vitality of declining manhood is restored, which is an idea entirely new and novel. When this fact, if fact it may be termed, becomes thoroughly known, we may expect a large delegation of the sexes who have passed the meridian of life as devotees to its hallowed shrine. This, in America especially, should cause a vast and decisive increase in the consumption of the article, as it is said there is no country in the world in which there are such numbers of the classes named. It is an encouraging feature, not only because of its beautifying and youth-giving effects, but because it is proposed to furnish us with an alarmingly cheap stimulant instead of the deadly drugs dealt out to us by the average bar-tender. When they get to manufacturing first-class wines and liquors from petroleum, it is presumed the whole force of operators will go off on a bender. It is certain the liquid has a neutralizing effect upon the nerves, for sometimes men become so overcome by inhaling it that they lie down never again to rise. At that day we expect to see a large advance in the price of the article.

But the subject at hand demands a more serious and careful consideration. There are those who are firm in the belief that its use, as applied externally, has preserved the original color of the hair. Others have had their teeth preserved and beautified, and even have had their breath perfumed by its delicate odor. It is said to be largely used in the manufacture of what is termed in this country as "West India Molasses." And brown sugar, beeswax, chewing gum, sperm candles, and in fact everything of a soluable character used in the various channels of domestic necessities, comes in for a share of some product of American petroleum. Into the various mixtures of paints and varnishes it also enters to an extensive degree. All these are simply evidences of a most rapid increase in the consumption of the article. It is a small matter at first thought, it is true, to supply all the requirements of the world in either of the cases named, but when all of the forces are combined the alliance becomes most powerful and effective. Thus, step by step, the use of petroleum becomes more and more general; and, judging from appearances at the present time, the value of the product—not as an integral, but as forming an important component in the various articles described above—has not been fully appreciated. The numerous attempts that have been made to introduce it as an agent of motion have not, it is to be regretted, proven as successful as the trade might desire. Yet, notwithstanding, it is destined to play an important part in this particular line at an early day. We understand two valuable inventions, having in view the utilization of petroleum as a motive power in the commerce of the seas, are now about to be applied, and the results will be awaited with great interest. Then, moreover, there are possibilities of its forming an interesting part in the gas supply of many of our larger cities. As it is strictly a combustible substance, easily transmitted from a liquid to a fluid state through the process of heat, which may be engendered by the combustion of a small quantity of the liquid itself, there would appear to be no just cause why it should not form a most substantial basis for the production of gas. Unless, therefore, the daily yield falls far below the total requirements of the trade by which the prices are to be elevated beyond the limit at which other and opposing

elements are utilized, there is no doubt but that the field for the uses of American petroleum will be wonderfully enlarged in the near future. There is greater diversity in its utilization than in any other mineral product known to the age, and there seems no limit even yet. We are truly ilving in an age of advancement in the uses of petroleum.

WEST VIRGINIA AND OHIO.

ON the Little Muskingum river, a few miles above Marietta, O., is an oil field which at one time attracted the attention of oil men, and caused interest to be manifested by others outside of the trade. Wherever the surface indications showed a probability of oil, the drill was set to work with all the zeal such new enterprises usually inspire. That there were many failures resulting from such rash ventures, the old weather-beaten derricks still standing along the creeks and rivers in various places fully attest. This oil fever was one of the most exciting and fascinating that ever possessed the minds of men. Drake's great success on Oil Creek in developing petroleum deposits, together with the fact of a high price at first, and a supposed limit to the small territory then defined, stimulated a mania to push the drill. At the close of the war, oil companies were organized with the capital at that time so easily obtained, and so recklessly invested in every enterprise which looked at all feasible and promised returns which would bring wealth with lightning-like rapidity to the investors. Among the many fields tested, there were a few which returned handsome dividends to the fortunate owners. The field mentioned above was one of the few which could truthfully be classed among the paying ones. In 1862 the first well was struck. At that time the idea of obtaining oil in another sand than the first was unknown. After a time experience taught the operator that oil could be found in the first, second, third, and even the fourth sand in some instances. In 1864 the McFarland well was drilled to the third sand, which was found at a depth of 620 feet. This well started off at 300 barrels a day, but declined in a short time to 50 barrels a day, and in a few months came down to 15 a day. The war was still raging, and the rebel General Jones made a raid in this part of Virginia and Ohio, and burned all the wells, then numbering about thirty. The Tack Brothers, now of the McCalmont Oil Company, struck a big well in 1865 at Burning Springs, Va. It must be borne in mind that the belt extended across the Ohio river into West Virginia about six miles. Tack Brothers' gushre started off gaily at about 3,000 barrels a day, but soon dwindled down to a very small producer. In 1869 the number of producing wells had increased to 300, with a production of less than 1,000 barrels a day. It has never been increased since, and at the present time is less than 400 barrels. Frank Conkle, an operator well known in the McKean field, once went to West Virginia with an intention of investing considerable capital. In looking over the field he saw a well that was doing 150 barrels a day; he was told so by the foreman of the lease. It flowed at a rate (while Mr. Conkle was present) that justified the statement. He found the owner—a tall Kentuckian—who stated that the price of the well was $5,000. "But," said Mr. Conkle, "I don't want to cheat you; I just came from the well, and it is flowing at a rate that justifies me in offering you $10,000. Of course I don't want to cheat you." "All right," said the Kentuckian, "you can have it at your own figures." The $10,000 was paid over, and the necessary legal documents drawn up. The well was visited the same day by the new owner, but he did not find it flowing. In a day or two it made another flow which looked as though it would do all that the foreman claimed. It was a grievious disappointment, however, and never produced 100 barrels all told. Mr. Conkle can never forgive himself for his confidence in that lease foreman, and his desire to deal justly by Kentucky sharpers.

A school district near White Oak, a village within the oil belt, had about an acre of land attached, deeded by a benevolent person who had long before been gathered to his fathers. The school trustee thought it good management to lease the lot for oil purposes. The well was a good one, starting off at 150 barrels a day. One year after it was doing 60 barrels a day. The relatives of the donor of the school lot contested with the trustees the right of leasing the land for any other than school purposes, and made a strong legal fight to get possession of the property. The trustees won the suit, after a stubborn contest; and so profitable has been the royalty from the well that the trustees were enabled to pay the costs of litigation, build a new school house worth at least $2,000, buy a $15,000 library, and have a handsome sum to their credit in bank now.

In 1868 the West Virginia Transportation Company succeeded in getting control of most

of the pipe lines in the field. General Van H. Bukey was their Superintendent, and a most energetic one he proved himself to be. Shortly after they commenced the pipe line business, a strong rivalry was instituted under the leadership of General Weaver. A big well had just been struck at Cow Run, about four miles in advance of developments, which both pipe lines were anxious to connect with. General Warner telegraphed to Baltimore for pipe or tubing, and ordered enough to lay four miles of it at once. General Van H. Bukey telegraphed to Charley Cushing, now of Scott & Cushing of this city, who was then the field manager for the West Virginia Transportation Company, to buy sufficient pipe to lay the line, and if he could procure it no other way, to buy tubing already in the wells and have it pulled out and distributed on the ground within the shortest possible time. Mr. Cushing bought the tubing, paying as high as a dollar a foot for it in some instances, and had it on the ground, the line all laid, and connections made with the well in two days from the time the order was received. General Warner's Tubing had not yet left Boston when the West Virginia Transportation Company had the production of the well. Much dissatisfaction has been felt and emphatically expressed by the producers in that region against the Pipe Line Company, who have now an undisturbed control of the oil. They charge forty cents per barrel for piping, which, as may be inferred, is very profitable employment.

The district is a remarkable one in the peculiarity of the sands and the oil found in each. The first sand, which is usually found at a depth of from 100 to 300 feet from the surface, produces fine lubricating oil of 22 to 26° gravity. The second sand produces a lighter oil of 32 to 38°, while the third sand is first-class oil bearing rock and produces an excellent quality of illuminating oil of 42 to 48° gravity.

Many wild-cat wells are drilled every year in various parts of the country, but thus far it has been labor in vain.

The production is likely to go down so low that the district will be unable to supply the local refineries. It was the realization of this fact which lately brought these refiners to a determination to make an effort to send barges, to be loaded with our Pennsylvania product.

WE would call the attention of our readers to the complimentary notices of the AGE by the leading press of the couutry.

OIL LEGISLATION.

IN Michigan oils for illuminating purposes must be branded after inspection, and if they emit a combustible vapor below 120° F. their sale is prohibited under a fine not exceeding $300. The State Inspector may appoint deputies, and both are required to give satisfactory bonds. The testor to be employed is that adopted by the State Board of Health. The Inspectors shall collect sixteen cents for each barrel or package of oil not exceeding fifty-five gallons. The act requires the inspection of all illuminating oils before leaving the refinery, and prohibits the sale of oil not inspected under a fine of $300. The salary of the State Inspector is fixed at $1,500, and that of the Deputy Inspectors is determined by the number of samples examined.

In Wisconsin a State Inspector is to be appointed by the Governor with the consent of the Senate, such Inspector to hold office for two years. Each Deputy Inspector is to remit to the State Inspector two cents for each barrel of oil inspected, which amount constitutes the salary of the State Inspector. This officer is required to give a bond in the sum of $2,000, and the deputies a bond to be fixed by the State Inspector, but not to exceed $2,000. The standard is a burning point of 120° F. Any person selling oils not thus inspected, or any person using such brand is liable to a fine of from $5 to $500.

In Ohio several acts have passed the Legislature, commencing in 1862, governing the sale of refined petroleum. The last act was passed in 1880. This requires that petroleum and its products intended for purposes of illumination shall be inspected, and prescribes the method to be followed in such inspection. It fixes the standard at 120° F., and prohibits the sale of illuminating oils which flash below this temperature. The use of Foster's automatic oil tester or an open cup, described in the act, are the instruments to be employed in determining the flashing point. The Governor is to appoint a "State supervisor of oils," to hold office for three years, and the supervisor is authorized to appoint deputies. All oils inspected must be branded "approved," or "rejected for illuminating purposes," according as they do or do not come up to the required standard. The fine for selling "rejected" oils is fixed at not less than $1,000, or imprisonment not exceeding twenty days or both. The supervisor is required to furnish a bond in the sum of $20,000, and

deputies $5,000. Inspectors are to receive from the party for whom the inspection is made forty cents for a single package of oil, twenty-five cents each when the number does not exceed ten, fifteen cents when not exceeding fifty, and five cents each when the lot does not exceed fifty barrels. The fines for selling oils not inspected is from $100 to $300, and any person using such oils is liable to fine.

In Indiana they have not had so many changes in the law. That in force at the present time was enacted last year. The inspection of all oils before being offered for sale, prescribes the apparatus to be employed in testing, and fixes as the standard a flashing point of 120° F. The Governor is to appoint a State Inspector of oils, to hold office for two years, the Inspector to appoint deputies. Oils must be branded according to quality, and the fine for selling "rejected" oils is $500. The State Inspector is required to give a bond in the sum $10,000, and deputies $5,000. The fees are fixed at forty cents on each barrel or package, when the number does not exceed two.

The law of Illinois gives the power to the Mayor and Council of any city or to the trustees of any town to appoint inspectors to hold office for one year. The standard is fixed at 150° fire test, the same to be stamped on each package inspected, with the word "approved" or "condemned." Manufacturers are required to notify an inspector within two days after the refining of oil, that the same may be properly inspected. Persons selling oil for illuminating purposes which has not been inspected, or which is below the standard, are subject to a fine of not exceeding $200, and are also liable to the party injured for all damages occasioned thereby.

The law of Pennsylvania on the subject requires a flash test of 110 degrees only, and this may account for the numerous explosions that occur in the immediate neighborhood of the source of supply. Oils of a much higher grade are sold, it is true, but as the price of these is much higher than the low test oils, the great majority of consumers use the latter. Then there is encountered the danger of ignorance as to the necessity of having lamps properly cleaned and trimmed before using. No lamp should ever be lighted the second time after burning a few hours without first undergoing a thorough cleaning, especially the burner. The air passages should be kept free from dust, and a lamp filled with a low test oil should never be carried through apartments where there is a draught, nor should children ever be permitted to carry a lamp under any circumstances, as placing it in a slanting condition forces the oil up the wick) which, reaching the flame, causes excessive heat, and may result in an explosion. With high test oils no such danger would be encountered, however; and, for this reason, we hold that the law of this State should be repealed and a more stringent measure adopted.

GERMAN PETROLEUM.

THE obstacles encountered in trying to develop an oil field in Germany, seem to be of insurmountable magnitude. Foolish statements have gained credence regarding a rich strike at Ohl Heim, New Hanover, and in order to give the place a distinction of importance, it has been named "New Pennsylvania." Traces or evidences of oil have existed in many localities through the northeastern portion of Germany, principally in Hanover for ages. But the character of the formations in which the oil is found is decidedly opposed to the regions' ever becoming of great importance as an oil centre. A well is now about to be abandoned at a depth of 600 feet at Brunswick, about 100 miles south of Hanover. No oil formation was discovered from top to bottom, and three different sizes of casing were used during the drilling for the purpose of shutting off the gravel and quicksands which found their way into the well at all depths. Between Brunswick and Hamburg a well was sunk to the depth of 125 feet, about a year ago, without satisfactory results. The indications or evidences of the existence of oil are peculiarly of a surface nature. It is of a shale species when it reaches the surface, which it does by oozing through fissures of the rocks and sandy clay soil which abound in that part of the nation. It partakes of the nature of the slippery rock section of Butler county, though the topography of that county is of a more even and undisturbed character. The oils, however, are similar to those found in Germany.

THE Bald Ridge Oil Company is operating about five miles west of Butler, Pa., with some degree of success. Two wells are producing about eighteen barrels a day. Three others are drilling and will soon be down to the vital spot which will test the territory sufficient to determine whether it is a small pool or a belt of some dimensions.

OIL AND GAS.

IT was stated, not long since, by an elderly woman, who was possessed of more reverence for her Creator than knowledge of geology, that it was wrong—a crime—to open so many holes in the earth by which the gas and oils were permitted to escape. The Lord had placed these agents in the bowels of the earth for a purpose, and oil men were a wicked race bent on defeating the plans of the Almighty in removing them. This gas and oil was intended, she maintained, for future use in the destruction of the world, and if they became entirely exhausted there would be nothing left with which to kindle the big fire. Her reasoning on the subject was about as correct as that of most people who have never given the matter serious thought. It is one of the distinctive features of oil wells that more or less gas exudes from all of them. Many have been of the opinion that the presence of gas is an indication of the existence of oil in any given locality. This, however, is a great mistake. The fact that gas always, or at least in most cases, accompanies oil in its passage from the chambers where confined, is no proof that they are combined by forces of an indistinguishable character. Were this not so, it might be assumed that wherever gas exuded from the earth oil must exist in close proximity. But gas is evolved from coal mines, and is given off in the decomposition of all substances, and maintains exactly the same relations whether appearing in large volumes, as with petroleum, or in the manner referred to—from decomposing substances. Gas comprises two natural agents, carbon and hydrogen, and as a consequence produces a most brilliant light in combustion. The city of Bradford is lighted pincipally by this agent, in the state in which it leaves the reservoir of its former confinement, being brought through pipes a distance of many miles. When the fluid can be obtained in sufficient quantity by boring wells, it is of course the cheapest light that can be used, providing it be not furnished by corporations, who, as a rule, estimate brilliancy with quantity in order to bring the value up to a standard equal to or greater than oil. This, however, is the business of the corporation, and with it we have nothing to do. But, as the components of petroleum are nearly all capable of complete combustion, it appears at a glance that the manufacture of gas from crude petroleum, for the larger cities, is destined to form a very conspicuous part in the future consumption of that article. Gas should be manufactured from oil in every city and town, and supplied to consumers at rates that would curtail the present expense of lamp oil. Petroleum gas, too, when properly treated, constitutes a finer species of the fluid than any that can be produced from coal products, and it would appear somewhat strange that even in the principal cities of Oildom the matter receives no attention.

THE PECULIARITY OF OIL WELLS.

IT is said that no two animals or human beings possess the same characteristics. In many cases there is a strong resemblance or similarity, it is true, but of the vast millions that have come and passed away, and of the millions that remain, no two have ever been found in whom there did not exist a contrariety of qualities. And what is true of human beings in this regard seems also to be true of oil wells. Of the thousands that have been sunk throughout the region and the world in general, none have exhibited the exact symptoms of any that have preceded. Two wells may be sunk within 100 feet, or less, of each other, and, strange as it may appear, there will be a wide difference in their character and in the treatment demanded by each. Just why this phenomenon exists is not explained by any theory based on scientific principles. It is true the "record of the rocks" offers some suggestions as to the cause, but leaves us in deplorable darkness as to the process by which the problem might be solved. In some localities, so far as human intelligence can descend, the strata from which oil is obtained, in different wells are exactly alike in texture, as well as in magnitude of dimensions. The "prolific bed" may be found at precisely the same depth, at or above tidewater level, and the indications, so far as general characteristics or appearances of wells are concerned, may be so very similar as to defy distinction; and yet, when it comes to the management or treatment, it will be found that they are related only in name. One will "empty itself" in the natural state and make a big fuss generally, while the other will be as quiet and peaceable as a baby elephant, requiring a dose of glycerine to cause it to emit its contents. One will start to flow the instant that the tubing is placed in position, while the other will require considerable agitation for the same result. One will pulsate with a regularity that would correct the time-piece carried by many a pumper, while the other will

retain its strength during irregular periods, and then belch forth making "Rome howl," and the air "jingle" with its unearthly sounds. One will cease flowing occasionally, requiring a certain amount of doctoring and physic to keep it in activity, while the other will run months, and sometimes years, without interruption. Lastly, one will produce a third more oil than the other, and no reason can be assigned for it. It is probable, however, that the gaseous element has a great deal to do with these differences. It is well understood that even in the most perfect specimen of conglomerate rock, gas is very unevenly distributed. Again, geology teaches us that remarkable variations occur in the most regular formations. Sand or oil rocks, above all others, seem to be possessed of a large number of compact pillars, and when these are penetrated by the drill, greater quantities of explosives will be found to be necessary in opening the pores which admit the liquids to the well. Therefore, we may never expect to witness similar results from different experiments with the drill, and the peculiarities will ever continue.

THE OIL BELT.

A MAP of the entire petroleum region of Pennsylvania will be found in this number of THE AGE. Its equal has perhaps never before been published. By it a bird's-eye view, as it were, is given of all the oil deposits so far discovered in this section of the country. While it is a most comprehensive document, it also elaborates to that extent that nobody need remain in ignorance as to the relation of one deposit to another. While the oil trade has spent millions in hazardous undertakings, it has spent nothing in efforts to remove the risk attending new developments. Twenty-one years have passed since the discovery of petroleum at Titusville. Since that time much has been accomplished in reducing the methods of handling and utilizing the product, after it has been placed above ground, to a perfect science, but up to the present time nothing has been accomplished in the direction of furnishing the driller with a chart by which he could guard against the disasters which are so liable to befall him in his search for a fresh pool of oil. Surface indications have proven very delusive in the past, and as yet they offer nothing of a valuable character in the direction desired. The State Geological Association, it is true, has attested its interest in the cause by gathering and compiling data of wells drilled in various sections. But as yet it has accomplished simply nothing in the way of affording the necessary information for successfully locating oil wells. When the field in Allegany county, N. Y., was opened to the gaze of the people, it astonished the men of science just as much as it did the crudely-constructed specimens (intellectually) of the oil fraternity. Men of science have no theories of a substantial order as regards the origin or extent of the oil formation. The opinion of any student of natural science is equal to that of any Professor of Geology on this subject, and where light is to come from is a profound mystery. It has been a rule with those who would pretend to have some light on the subject, that the oil deposits of Pennsylvania are properly divided into three basins—the Butler and Clarion, the Venango, and the McKean. But so far as the *basins* are concerned, they have about the same relation to fact that the constellation Ursa Major has to the Big Bear. It requires some careful study to ascertain the location of the stars which form the head, legs and tail of old Ursa, and it also requires a deal of figuring to ascertain just where the handles of the oil basins are soldered on, or exactly where the spout should come in view. The records of surface altitudes above sea levels have aided much in determining the depth necessary to go in order to reach the strata, but that is the end. We find by reference to the diagram that there are a great many *basins* or *pots* or pools or deposits—whichever the reader chooses to designate them. And they are scattered over a very large area of territory. In some cases these pools appear as links which form a continuous chain many miles in length. Such developments have given rise to what is termed the "belt theory." This idea was first introduced by Mr. C. D. Angell, now a successful producer of the Northern Field. Mr. Angell embarked in the oil business in 1867, casting his lot in Franklin, Venango county, and investing in oil lands and wells in the vicinity of Scrubgrass and Foster Station, along the Allegheny river. Mr. Angell, by the collection of data from a certain number of drilling wells at various points of the compass, became impressed with the idea that the rock from which oil was obtained lay in a general if not a continuous line. Upon this theory he proceeded in a northeast course from the point near Scrubgrass where he had just succeeded in obtaining some paying wells. This led him in the direction of developments on Oil Creek, the bearing being

about sixteen degrees east of north. His first attempt at drilling on this line resulted in a complete triumph for his "new idea." This occurred at or near Foster Station, nine miles up the river from Scrubgrass. It was, therefore, but a short time till the theory was thoroughly established by the development of a succession of pools which *chained* the upper portion of the district with the lower, though, as seen by the diagram, the links or pools are separated (or broken) by dry territory. Moreover, from the date of the establishment of this belt theory, wherever a new well was struck a belt running northeast and southwest was immediately adopted as the proper course to pursue in making other locations, in order to hit the same *lead*. The sixteen degree basis finally became changed to twenty-one and twenty-two, and in all lower country speculations of this character these have been the ruling figures in belt tracing. The theory served a grand purpose in the development of the Butler county field, for the course, especially through that county, ran directly in a line of twenty-one degrees south of west from the initial strike near the mouth of the Clarion river. Those who had faith in "the belt" proceeded in advance, and as a result the field was developed with remarkable rapidity. So much so in fact that the country became deluged with oil, and prices dropped to forty cents a barrel. This transpired in 1872, the first time that oil was sold at such insignificant figures for ten years. The Clarion county deposit leans somewhat to the east, assuming a bearing of about forty-three degrees.

Thus we have given some of the results of the Angell belt theory. But the question arises, does it hold good in all sections? In the McKean field it will be seen the deposit occupies an angle of about forty-five degrees, and that of Allegany, N. Y., lies about east and west. The Oil Creek formation points nearly north and south for some distance, where it bends slightly and assumes the Angell attitude and points directly toward the lower-division pools. The result of the theory to Mr. Angell and his partner at the time, Mr. F. Prentice, was a large increase in their annual income, for they settled down upon a small piece of land near Foster Station, as above related, which proved to be exceptionally rich. One of fifteen or twenty wells sunk on the property is credited with having yielded 400 barrels a day.

While, furthermore, numerous successes have been recorded in belt lining, there have been also many failures. Acting under the impression that the continuity of the sand or conglomerate formation was a fact, a number of operators proceeded to drill on the regular line, only to drop in "betwixt and between" the pools, there to find traces, only, of the oil, or the pebbly sandstone which should contain it.

It is the general opinion of many who have made this belt theory a study that the mountain ranges are indicative of the course of the subterraneous sand formations as regards direction longitudinally. The Allegany mountains "cut" an angle of forty-five degrees northeast and southwest, and in the State of Pennsylvania all mineral products are found to have this bearing. In the Pacific country they are said to assume another course entirely, viz.: southeast and northwest.

It is true in the oil regions of Pennsylvania nearly all of the oil deposits are found *leaning* toward the northeast, especially in the lower country. But the old Oil Creek sand rock hugged the perpendicular so closely as to exhibit a north and south line, agreeing, however, with the hill ranges that skirt the country. This peculiarity seems to have a counterpart in McKean county, where the outline of prolific pools have been found at intervals along the hill ranges which have a bearing of forty-seven degrees. Again, in Allegany county, N. Y., the mountain ridges run almost directly east and west, and, strange as it may appear, the oil deposit maintains the same characteristic.

Whether, however, these facts have any bearing upon the phenomena of oil developments is a matter for scientific discussion, and is not to be considered in this relation. But the question of surface indications has agitated the mind of the oil trade ever since the first discovery, and if there be any profit in the study, or any probability of deducing a simple fact not previously known, it will pay to bestow at least a limited share of attention upon it. When an oil man is approached on the subject of investing in new territory, he very naturally makes inquiry regarding the "lay of the land." Should it prove to be rough and stony, with a large share of the pebbly sandstone strewn over it, the probability of his giving attention would undoubtedly be materially enhanced. Of course he is not a man who would admit of the charge of superstition, but somehow he feels considerably more at ease when he finds, after making an inspection of the premises, that the surface possesses all the necessary qualifications. In order, therefore, to give an idea of the extent of

country where surface "evidences" are encountered, we have drawn a special line in the diagram which marks the area. It furnishes food for thought. It will be seen that but small spaces of the great region have been found productive. Other large portions of it, however, have been thoroughly tested, and with exception of the section which includes portions of Warren, Forest and Clarion counties, there would appear to be little hope of unearthing any new field of great magnitude. This exception is made under protest, however, as even there it would seem as if the capabilities of a development of importance were seriously wanting. This section, moreover, occupies a central position, while that of Tidioute, whose sand deposit is the finest ever discovered, and lies with the course of the sun, is on the very outskirt of the productive area; yet the characteristics of the conglomerate rock found in the former are not of a flattering nature.

Whether or not this great "oil track" is to become elongated toward the northeast in the State of New York, and southwest into the States of Virginia, Kentucky and Tennessee, is a question for the future historian of the country to relate. The diagram furnishes another chapter in oil region literature that must be appreciated by the trade.

THE McCALMONT OIL COMPANY.

IN 1877 the price of oil was so satisfactory to the producing interests that men of means were induced to invest largely in territory. Bradford had not yet attracted general attention. The Bullion field was the most inviting of any then known, and large transactions were an every day occurrence. About this time the McCalmont Oil Company was formed, and was named after the farm known as the McCalmont farm, which proved, to the company at least, a very profitable one. The gentlemen composing the company were David Kirk, F. A. Dilworth, Frank Tack, F. E. Tack, A. H. Tack and I. E. Dean. They leased the farm named at one-fourth royalty and $15,000 in cash bonus. The price was considered an extraordinary one, even with oil at $3 a barrel, and they were generally ridiculed by the knowing ones for making a foolish outlay of capital. One hundred acres was the extent of the tract, but it proved afterward to be right on the jugular vein of that very rich but spotted field. The first well drilled was known as "Big Medicine," and started off gaily at 1,500 barrels a day, but did not continue at that prolific rate a great while, decreasing rapidly until it became a very commonplace affair. The "Baby," a well drilled soon after "Big Medicine," started at 400 barrels a day, declined slowly, and made a much more profitable well than the other. The best well the company ever drilled on the farm was known as "No. 31," which started at about 1,500 barrels a day, and is doing about 30 barrels at the present time.

In addition to the wells drilled by the McCalmont Company, a number of locations were sold, on which wells were drilled and, singular to state, almost every one of them proved dry. Some of the leases were disposed of at $1,000 an acre and half the oil. The $1,000 an acre was all the company ever got, as, before stated, the sub-leases were generally dry, while the portions of the farm operated by the company were wonderfully rich. The company was first organized under the limited act of the State, in January, 1879, and was subsequently consolidated as a corporation, without limit. That same year the company concluded to try its fortune in the northern field, and made some heavy purchases of the Bingham lands, and commenced operating with signal success from the very start.

In the spring of 1880, when O. P. Taylor first struck the Triangle well, which demonstrated, after many failures, that oil could be produced in Allegany county, N. Y., this company made some purchases in the town of Alma and drilled a few wells, which never amounted to anything startling, hardly paying for operating such territory, while there were thousands of acres of excellent territory yet undrilled in McKean county. Not until the famous Richburg well was struck, last May, did this company make any new purchases in the Allegany field, when it bought the Ackerman farm at $90 per acre, adjoining the village of Richburg. This farm contained about 350 acres, and has since proved one of the best producing farms in the region. Since that time the Reed farm, adjoining, was purchased, which has been a bone of contention, covered as it was by the Sheppard system of leases. A late decision of Judge Daniels of the Supreme Court of New York gives the company possession, dissolving the injunction granted to Sheppard, and leaves the company free to operate it, which it will do with its accustomed energy.

At the present time the company owns 955 acres in fee in the Allegany field and 406 acres in the McKean district. It has 88 wells in

McKean county and 8 of its own in Allegany, together with 18 others from which it gets a fourth royalty. This makes a grand total of 1,361 acres of land and 114 wells. Ten sets of tools are now at work in the Allegany field. This company will finish at least fifty new wells during the next four months. The McCalmont Oil Company is one of the solid institutions of the present time in the northern region.

SECOND-HAND ENGINES.

IT will, of course, be conceded that occasionally great bargains may be obtained in buying second-hand material. Such cases sometimes occur through the bankruptcy of large manufacturing companies, or from other business causes. In cases of this kind it is easy to find out who furnished the plant, the length of time it has been in service, and the manner in which it has been used, with perhaps satisfactory assurances of its present condition. Opportunities of this kind are few and far between.

Ordinarily, he who buys second-hand goods realizes, when it is too late, he has made a bad investment, but consoles himself in the thought of having obtained a valuable experience, in some cases dearly bought. The purchaser of a second-hand boiler is peculiarly liable to be victimized, and is not only in danger of losing his money, but in most cases runs an additional risk of losing his life.

Engaged in the business of buying and selling second-hand machinery are many honorable men, who, understanding their business, are careful to buy only fit and salable articles, and thus they avoid the necessity for misrepresentation in selling again. The dealer is not alone to blame for the gross misrepresentation sometimes made. The average buyer of second-hand machinery is not content to buy the article for what it really is, and his evident desire to be humbugged stimulates unscrupulous men, who in the trade are largely in the majority, to make a shrewd calculation as to the manner of man with whom they are dealing, and cook up a story most likely to serve their purpose. Many tricks are resorted to by the latter class of dealers to sell their second-hand boilers. It is doubtful if they ever handled anything that had been used over a year, and was not built by days' work, if we may believe their story. One of these worthies sold from his stock for several years, each customer being assured that particular boiler was one of a number made by him for a large and well-known manufacturing company in a distant part of the State, who, when the boilers were nearly finished, changed their plans, had him build larger boilers and retain those first ordered. Tubular, flue, upright and locomotive boilers were alike sold from that order, and for ought I know to the contrary, he may be filling orders yet from the same mythical stock.

One of our assured who had just bought a *new boiler* under some such representations, notified us to make an inspection before he began using it. In the report of inspection, after describing the location of certain defects, there was a further recommendation from the inspector as to the best means to be employed in cleaning the boiler of scale. Our friend did not understand how a new boiler could have so many defects, and his astonishment and indignation were further increased when he read that part of the report concerning the removal of scale. He returned the report to the office with what was meant to be some very caustic comments, ironically suggesting that he must have, by some mistake, received somebody else's report. It could not refer to his boiler, for it had never been used before. He was sure of that. It had to be finished after he bought it.

On investigation it transpired the *alleged* new boiler had not only been used for a number of years, but it had been grossly abused by firing it up without any water, and burned so badly it was thought unprofitable to repair it by the boiler-maker, who sold a new boiler in its stead. The burned boiler next passed into the hands of a second-hand dealer for about the price of old iron. He had it repaired, shortening it up by cutting off the worst ring of plates. In setting it up again in the brick work, it was thought advisable to turn the boiler end for end. This, of course, left new holes to be drilled and tapped in the boiler-head for gauge cocks, water gauge, etc. This was the proof relied upon by our friend to convince us, as it did him, that the boiler was a new and unfinished one at the time he purchased it. He now realizes the truth of the old adage which teaches "appearances are sometimes deceptive," and feels it has a special application to that class of boilers.

In second-hand boilers the accumulation of sediment and scale on some inaccessible part, during a period of years, greatly reduces the value of its heating surface. Therefore, such boilers are necessarily more expensive in fuel than new ones. In some localities where fuel is abundant and cheap, the matter of economy

is of little importance. As a rule, boilers are only removed for some sufficient cause affecting their safety or economy, and they will be found on examination, when this is the case, fatally defective in some important particular. It may not be an easy job to make a careful examination of a boiler after it has been scraped and heavily painted. The most careful, painstaking examination, under such circumstances, may be very unsatisfactory in failing to detect incipient fractures in the sheets, the first external evidences of crystallization. The paint pot imparts a freshness and bloom of youth to the faded shell of twenty years' service, that is well calculated to stagger one's belief in "wear and tear," and doubt if there is any such thing as "fatigue in metals."—*T. B. Allen in The Locomotive.*

CONVERTING LIGHT NAPHTHAS INTO HEAVIER OILS.

A QUERY as to how the light products of petroleum can be converted into heavier oils, has been answered by a recent writer, who states that no commercially successful method of converting the light oils of petroleum into heavier oils has yet been devised, although numerous and promising experiments with this object in view have been made by scientific investigators. Prof. J. Lawrence Smith, in his report on petroleum, published in Vol. III. of the "Reports of the Centennial Exhibition," gives a highly interesting and lengthy account of these trials, from which we abstract the following points: One method of accomplishing the conversion of light into heavy oils, is said to be by heating the vapors of naphtha above their boiling point. S. Dana Hayes is reported to have made some experiments which tend to prove this fact by operating on oils made from naphtha distilled at a temperature below 300 degrees Fahrenheit. These very light oils were heated in an apparatus used for a special purpose in the arts, by which the vapor of the oils was held in suspension in the vapor of water, under pressure afforded by steam over 212 deg. Fah., but never above 300 deg. Fah. Under these circumstances, light uncondensable gases and vapors pass upward and the heavy oil falls downward into the naphtha below; and it was found that the longer the vapors were held together in the apparatus, heated and under pressure, the more perfect were the decompositions, and from 2 to 10 per cent. of heavy oil was obtained from the naphtha in different experiments. The heavy hydro-carbon oil obtained in this way is said to have had a dark yellowish-brown color, smelling of adhering naphtha when fresh, but after standing for a few days exposed to the air, it lost this odor and became nearly neutral, or comparatively free from offensive odor. Its specific gravity varied considerably on account of adhering naphtha; its boiling point was above 400 deg. Fah. It did not evaporate at ordinary temperatures; left a permanent greasy stain on paper; proved to be a good lubricator for machinery, and when redistilled at high temperatures, it was found to break up into lighter and heavier liquid hydro-carbons, paraffine, and separated carbon. It is essentially a paraffine oil, like that of the same density obtained directly from petroleum or its heavy products by distillation. Referring to this interesting investigation by Dr. Hayes, Prof. Smith remarks that when refining petroleum for illuminating purposes, it has been desirable to break up the heavier products and convert them into the light hydro-carbons generally known in commerce as "kerosene," and several forms of distilling apparatus have been devised for this purpose, in which the vapors of these bodies, by being heated above their boiling points, are decomposed or "cracked" first into boiling oil entirely. But the apparatus and experiments of Hayes demonstrate that light petroleum naphthas, and probably distilled naphthas from coal and other sources, may be "cracked" at a temperature below 300 deg. Fah. into lighter and heavier products, the latter being paraffine oils that belong to a class of hydro-carbons entirely different from that of the original naphtha. The above account of Dr. Hayes' investigations will suffice to show that the conversion of the light oils of petroleum into heavier ones is quite feasible; whether it can be done with sufficient economy to make the operation a commercial success, is the important question. Dr. Hayes has shown that the problem is possible of solution, and has indicated the way. It remains now for our ingenious inventors to take the matter in hand and work it out commercially. The heavier oils being much more valuable than the naphthas, makes this conversion, if it can be cheaply and thoroughly effected, a most desirable one.

It might be added here, as further proof, for the benefit of inquirers after light on this subject, that within two miles of the city of Bradford there is an oil refinery, that has been in successful operation for some time past, which solves the problem by practical experiment.

The works are owned by Clark & Co., who are possessed of a secret out of which they have realized large profits. Inquiry at headquarters failed in the object intended, which was to ascertain something of the method. But it was stated by the man in charge that from 75 cents to $1.00 was made on every barrel manufactured, and that their works were capable of turning out 500 barrels a week.

THE PETROLEUM TRADE.

THE remarkable growth that characterized the petroleum trade during the year 1881, as shown elsewhere in this issue, has had a most cheering and buoyant effect upon producers as well as others who are so fortunate as to be possessed of large stocks of crude. It would appear from the figures given—which are absolutely correct—that instead of there being danger of a depreciation in future demands from abroad we are to witness an interesting increase. It is shown that there was an appreciation of 45 per cent. during the past year.

This, together with the fact that the home trade advanced 25 per cent. during the same time, with prospects of a much larger augmentation in the near future, is certainly sufficient to guarantee the full measure of the trade's anticipations. It has been argued that the production of petroleum in foreign countries would very soon swell to proportions sufficient to satisfy all demands of foreign consumers; but this arises from a chronic fear entertained by dealers rather than from a certain knowledge of circumstances. While the encouraging reports from the seven principal continental ports may be taken as an indication of improvement in the trade throughout Europe, they do not furnish any direct data by which all foreign demands in the future may be estimated. American petroleum is destined, at no distant day, to illuminate many of the dark places of Asia and Africa, where as yet it is scarcely known. The stringent measures adopted by some of those eastern governments in regard to its admission as an article of commerce are just what should be desired by the trade. The result will be that a purer article will be shipped there. The German government, which has led off in this particular, has conferred a great favor upon petroleum commerce. And it is hoped that every foreign nation to which our product is shipped and to which it is yet to be shipped will enforce "decrees" against the sale or use of any but the most approved manufacture. None but the higher test oils should be admitted, and this accomplished an era of wonderful appreciation of its use, will open for this most wonderful of illuminants. It is shown by scientific experiment that oils of the higher tests are not subject to premature explosions, and this fear removed from the credulous masses, the desire to use petroleum will become so strong and universal that just when least expected there will arise a demand that will require extreme effort to satisfy. The inferior specimens manufactured from foreign production are also aiding largely in creating this "appetite" for our product. So far as our information extends —and that is as far as possible at this distance —there exists no development at the present time that is calculated to interfere with our Pennsylvania supply. The only drawback it can ever encounter is in the matter of transportation rates, and while railroad facilities in the regions where oil is obtained in foreign parts remain as they are there will be little to fear, even from that source. Japan is undoubtedly making itself ready for an immense stride in the use of petroleum, though the recent imperial ukas regarding its importation have had a depressing effect for the time being. In China there is also a rapidly growing demand from the masses who have had the privilege of a "taste" of it, but certain influences that are of minor import have retarded progress for some time past.

Then, when we look nearer home, we are encouraged with the progress making throughout the western country. As yet, however, transportation rates are seriously operating against "cheap light" to the people. But as competition increases this difficulty will be overcome. It is now estimated that 16,000 barrels a day of crude will be required to fill the orders of American consumers during the year 1882 and for the foreign demand about 41,000, which will make a grand total of 57,000 barrels a day.

THE Gas Light Transportation Company, which proposes to make gas in the coal regions of this State, and conduct it by pipes to New York, Philadelphia, Baltimore and other cities, has issued its prospectus. The estimates of profit, as in the floating of all stock companies, are very liberal. In case 40,000,000 feet of gas are consumed daily, the new company furnishing its gas wholesale to the existing companies, it is estimated that the receipts from tar and ammoniacal liquors will amount to $584,000 a year.

ELECTRICAL CONDUCTOR FOR OIL TANKS.

THERE is nothing oil producers fear more than a storm accompanied by lightning, which often strikes the tanks, either directly or is conducted by the pipes, which form a perfect net-work over the country to the tank, and in fact the majority of the tanks are struck in this way. Many devices have been used to prevent these calamities, but with little success. The principal and best system heretofore used consisted of a series of poles erected around the tank, and having rods which extend from below the surface of the ground to and over the top of the tank, thus forming a net-work. At different places upon this net-work points were distributed to receive the shock and distribute it to all the rods, which conveyed it from the tank. This system, though effective to a certain extent, did not meet all the requirements of the service for which it was intended. Furthermore, it was expensive and hard to keep in repair, as the snow and ice in winter would accumulate in such quantities upon the rods that they would break from the weight and generally be out of order at the very time they are needed the most—in the spring.

To remedy these defects and produce a device that will combine cheapness, strength and ability to answer all the calls that it may be subjected to is the object of this invention, and to that end it consists of means whereby a single point can be used to produce the same effect as the devices previously used having so many points.

The rods heretofore used, as before stated, had many points to attract the electricity and convey it away from the tank. This effect can be produced by the use of a single point of sufficient capacity, if the latter be elevated a sufficient height above the tank to cover a radius greater than the tank. The rule for discovering this height is simple. A rod one foot in height will protect a radius of two feet. That being the case, it will only be necessary to find the diameter of the tank and divide it by two to find the height necessary to elevate the point. It is obvious, however, that the ordinary method of supporting a point will not apply to this device, as the electric fluid in passing through the rod may pass to the tank. To obviate this defect a foot is placed upon, but not attached to, the center or apex of the top of the tank, and a metal tube stepped therein.

The object in providing a metal tube is to furnish a support that will sustain the weight of the point and rods, and in the winter to sustain the additional weight caused by sleet and snow accumulating upon the rods and point. It therefore becomes necessary to insulate this tube at the top as well as at the bottom. To accomplish that end a glass cup is placed upon the top of the tube which receives the foot of the point. The foot is held in place by a pin which passes through the cup. The point is provided with a flange having perforations near its perimeter to receive the ends of the rods. During high winds the point and rods will sway more or less, and if the glass be left in direct contact with the point and support the former would be fractured or broken by the tilting and grinding motion of the heavy point. To provide against any such accident a rubber packing is placed between the flange and cup.

The rods are made of any suitable substance, but a copper cable will be used. These rods are arranged in pairs—that is, the rod on one side has a corresponding rod on the other side, so as to form a couple—thus making a continuous circuit. The couples or pairs that can be used in this way is only limited by the circumference of the flange, which may be of any diameter; but two pairs are deemed to be sufficient for the purpose intended. To give the necessary ground connection the rods are run over insulators, which are attached to the wooden posts, which should correspond in number to the rods. After leaving the posts the rods are inserted into the ground to a point where there is constant moisture. If the insulator be attached directly to the tank it will necessitate the expensive process of drilling holes in the latter. To avoid this, posts before referred to, are set in the ground against the side and fastened to the top of the tank in any suitable manner and the insulator attached thereto. This ingenius contrivance for protecting tanks from lightning is the invention of Walter P. Newhall, of this city, who has assigned a one-half interest to Mr. James Casey, of 99 Main street. The patent bears date of December 13, 1881, and covers fourteen points of superiority, and which the inventor claims are entirely new.

A COMPANY, with a capital of 25,000,000 francs, has recently been formed in Lyons, France, for working the naptha and petroleum deposits of the Caucasus. The Banque de Lyon et de la Loire is at the head of the enterprise.

OIL STOCKS.

MONTHLY REPORT OF THE PRODUCERS' COMMITTEE FOR NOVEMBER.

STOCKS were received from 8,342 Bradford wells December 1st. Out of this number figures were given so that a comparison could be made between the stocks at 7,914 wells November 1st and 8,008 December 1st. The parties who owned 7,914 on the first of November had 8,008 on the first of December. The averages in merchantable oil were as follows:

DIVISION OF FIELD.	Number wells Nov. 1	Average production per well Nov. 1	Number wells Dec. 1	Average production per well Dec. 1
		Bbls.		Bbls.
Tuna Valley	236	78.8	238	81.5
East and West Br'ches	1149	111.8	1181	112.9
Kendall Creek	1299	76.4	1315	78.6
Foster Brook	1084	60.5	1090	70 5
S., M. & Rixford	665	60.9	668	67.3
Cole Creek	1017	117.9	1033	127.0
Tram Hollow	626	61.9	629	57 9
Oil Valley	489	71.7	492	83.3
Kansas Branch	229	62.2	228	64.4
Indian Creek	420	87.9	429	99 5
Meek's Creek	86	56.0	86	64.4
Four Mile	316	82.2	322	88.8
Kinzua	104	134 4	104	141.7
Miscellaneous	194	99.9	194	126 9
Total	7914	83.6	8008	89.6

Reports from 8,008 Bradford wells show an average increase of stocks in wooden tanks during November of six barrels per well. Gross averages can be obtained from the above table by adding twenty-two barrels to the figures showing the averages of merchantable oil in the different sections.

PRIVATE IRON TANKAGE.

The gross stocks in all private iron tanks in the Bradford field not turned over to the Pipe Lines, aggregated 167,729 barrels November 1st, and 129,504 barrels on the 1st of December. A comparison of figures shows that the gross stocks were reduced 38,225 barrels during the month, or 1,274 barrels daily. It will be observed that the total of gross stocks in private iron tanks given in this report for November 1st, does not agree with that published for the same date in the October report. Heretofore the compilers have been obliged to take an estimate on the contents of two tanks; this month exact figures were obtained.

BRADFORD'S NOVEMBER PRODUCTION BY THE STOCK REPORT.

The number of producing wells in the Bradford field, exclusive of Richburg, is estimated at 11,310 for November 1st. The producers who furnished stocks at wells for December 1st reported 15 abandoned wells for the month of November. If the owners of 8,342 wells abandoned 15 wells, it is estimated that 24 were "pulled up" in the field during the month. In the absence of an exact count this number is substracted from the 174 wells finished in November. From these figures the number estimated to be connected with the Pipe Lines as producing wells December 1st is 11,460. From the preceding data the following statement is made:

Time.	No. wells.	Average per well.	Total Stocks.
Nov. 1	11,310	83.6	945,516
Dec. 1	11,460	89.6	1,026,816
Increase in stocks in wooden tanks during November			81,300
Average daily increase in wooden tanks during November			2,710
Daily decrease in stocks in iron tanks			1,247
Total daily increase			1,436

The average daily pipe line runs in the Bradford field in November, exclusive of Richburg, were 63,330 barrels.

	Barrels.
Bradford Pipe Line Runs	63,330
Total daily increase in stocks	1,436
Bradford's November production	64,766
Bradford's October production	95,924
November's daily decrease	1,158

THE NOVEMBER RUN REPORT.

Exact figures in stocks at wells November 1 and December 1, with runs from the same wells, were forwarded so that the average daily production for 3,708 Bradford wells could be computed for the month of November. The appended table supplies the data used in computing the averages:

DIVISION OF FIELD.	Number of wells November 1st	Number of wells December 1st	Stocks at wells November 1st	Stocks at wells December 1st	Pipe Line runs during November	Average daily production per well during Nov.
Tuna Valley	167	168	16755	18167	15357	3316
East and West Br'ches	459	470	80939	86200	109994	8129
Kendall Creek	548	553	67896	69220	75863	4636
Foster Brook	542	545	71626	78689	68439	4605
S., M. and Rixford	333	336	29401	30630	41233	4204
Cole Creek	530	537	100137	103112	119816	7588
Tram Hollow	280	280	24331	22094	41834	4714
Oil Valley	306	308	30020	34313	47972	5625
Kansas Branch	51	51	3423	3658	3877	2685
Indian Creek	190	196	22059	22268	39723	6778
Meek's Creek	26	26	2506	2198	3236	3754
Four Mile	116	116	11072	12858	16499	5254
Kinzua	32	32	4416	4645	6290	6790
Miscellaneous	128	129	12903	12733	16712	4265
Total	3708	8747	477484	500785	606845	5589

Some producers who sent in their October runs failed to respond in November, while

others who neglected to report in October gave them in the following month. Since different groups of wells are used the averages for the different sections will not admit of an exact comparison with those published last month. If the stock report did not check the run report it would not be safe to draw general conclusions of the field from an average afforded by 3,708 wells. When the average production of any number of wells is used as a factor in determining the yield of the field the exact number of producing wells should be known.

We call the attention of producers to the fact that it does not follow that the stocks of the region are increased to the amount shown by the pipe line runs. It will be seen by the published statements of all pipe lines (issued on the 11th or 12th of each month) that the total runs in September were 83,907 barrels daily, but the shrinkage and loss in stocks in the custody of the lines were so large that the runs only added 77,680 barrels to the stocks on hand. In October the runs of 87.940 barrels only increased the stocks 83,790 barrels, and the November runs of 75,915 barrels added to the stocks but 71,803 barrels, showing that the daily average shrinkage for the above mentioned three months amounts to 4,822 barrels, above seven-eighths of which belongs to the Bradford field stocks. The previous eight months of the year 1881 do not show so large a decline, but sufficient to make it worthy of examination.

JOHN BROWN,
E. H. BARNUM,
BATEMAN GOE,
A. B. SMITH,
E. F. WILLETS.
} *Producers' Committee.*

OHIO possesses a small area of oil producing territory. The product thus far obtained, however, is better calculated for lubricating than illuminating purposes. It is possible, moreover, that by drilling to lower depths than has characterized former experiments in that locality lighter specimens of the article may be discovered. Recently a well completed on Duck Creek, near Newburg, in Noble county, fifteen miles north of Marietta, an old well was drilled deeper and it is stated a fair specimen of the oil conglomerate was found. Besides this, the well produced twenty-five barrels a day, and the oil is said to be much lighter than that produced from the shallow wells at Marietta. Considerable capital will be invested in developing the region as a direct result of this latest strike. Already several wells are projected by Cleveland parties and also by parties from this State.

SOLIDIFYING PETROLEUM.

A GERMAN resident of St. Petersburg is credited with having invented a process for reducing petroleum to a solid substance, and a company has been formed in that city to operate the patent. The mode of treatment is not yet disclosed, and chemists to whom small samples of the solid petroleum have been sent have not been able to make out the nature of the foreign substances that are added in a proportion of 2 or at most 3 per cent., to solidify the petroleum. The reporter says it is of a wine-yellow color, and has the consistency of very stiff gelatine; it can be kneaded with the fingers like wax, and is yet somewhat breakable. A small piece of the thickness of a lead pencil and about an inch long could be lit at one end and held with the fingers. It melted like wax, and it was only after a little, when hot drops ran down, that the flame had to be blown out. The danger of fire is considerably less than with liquid petroleum. The product can be easily liquified when required by the addition of vinegar, and the process is rapid. The vinegar in time separates out below and the petroleum above. It is not stated whether the same vinegar can be used repeatedly. It appears that the higher and low boiling hydrocarbons in crude naphtha are not affected by the solidifying agent, in which case the costly apparatus for fractional distillation might be dispensed with. It is stated that the cost of the substances used in the operation will be about one cent for every 100 pounds of oil.

This is a "hard blow" at tank car builders and pipe lines, whose business, when this new process shall have been proven a great success, will be entirely gone. Imagine producers rolling huge "logs" of petroleum on to gangways by railroad tracks and shipping them to mill. Or, witness them sawing their production into blocks and carting them to the nearest station for transportation to a refinery. This genius—the inventor—is evidently not a railroad or pipe line monopolist, for by his process the movement of crude oil will be made as easy as shipping a car load of lumber. Meanwhile, our advice to the railroads and pipe lines would be to hold on to the footing you have. It will be a year or two at least before the rattle of hard petroleum will be heard on public conveyances.

THE Elk county developments are so far unfavorable for the opening of a paying oil field. The drilling is deep, and salt water abounds.

REPORT
OF
OIL OPERATIONS FOR DECEMBER

WELLS COMPLETED.

TUNA VALLEY.

Farm.	*Operator.*	*Production.*
Dilks, Morrison		10
Scott pur, Vannormer & Mercer		15
"	L. Bowers	15

EAST BRANCH.

Ward, W. Ward		10
Enterprise T. Co., Bennor Bros. & Casey		15
"	Anchor Pet. Co	15
"		15
Deiter, Emery Oil Co		10
Foster, Tarbell No. 7		15
Corry, Alfred Ford		15
B. I. Taylor, Howarth & Merrick		8
"	Risher & Zeigler	10
Clapp, J. M. Clapp No. 37		30
" "	46	20
B. I. Taylor, J. L. McKinney & Co		10
Springer, Springer & Co		12
Morris, Emery Oil Co		12
" "		10
Stodard, "		12
W. Brown, Morris Bros. No. 3		12
DeGolia, Quintuple Oil Co		12
Shady, Watson & Fulton		10

WEST BRANCH.

B. O. C., Heald	10
Wilson, Picket	15
Kissam, Chapin & Co	15
Brown, Clark & Book	3
Crooker, Geo. Crooker	10
Emery, Koontz	10
Coleave, Cole	5
Waub, Wray & Williams	dry
Wells	30
Production	334
Average	12

QUINTUPLE TRACT.

23, Ralph Bros	15
63, Aiken	10
67, E. Strong	10
71, Apodebee Bros	10
73, Aetna Oil Co	12
101, E. Strong, No. 2	15
105, Smith & Seaman, No. 2	18
103, G. M. Barney, No. 2	20
132, Woodbury & Campbell, No. 2	18
134, D. M. Wray, No. 3	20
190, Jennings, Hunter & Co., No. 3	15
195, Wilber, Wentz & Co., No. 2	20
217, Gardner & Co., No. 2	12
219, Abbot & Proper	10
225, Casper Taylor	15
227, Geo. McCullough & Co	40
232, Wing & Co., No. 3	18
236, " " " 2	15
240, Barnsdall Bros	15
252, Clark & Foster, No. 11	15
253, " " " 1	20
254, " " " 1	12
260, Conover, Kelly & Stewart	12
265, Matthews, Boggs & Co., No. 4	15
269, J. Pendleton, No. 6	20
Salem, Quintuple Oil Co	12
191, Vroman & McGhaw	15
Wells	27
Production	429
Average	14 7-9

KENDALL CREEK.

Lafferty, Johnson & Co	15
Davis, Dr. Hammond	15
Buchanan, Anchor Oil Co	20
Moore, Huff & Ege	12
Whipple, B. M. Hurd	15
Monroe Jacob Sheasley	15
Turner, Swingle	10
E. T. Co., Anchor Oil Co	15
Seward, Dingman	15
Hardwood Oil Co	12

FOSTER BROOK.

Willetts, Willetts & Young	20
Snyder, Foxburg Oil Co	10
Baum, Richardson & Baum	10
C. B. & H. Tract, Moore Bros	15
" " Treat & Porterfield	10
" " Gardner	15
" " Brown	15
" " Eighmy Bros	10
" " Vandergrift & Miller	5
Lot 25, Lewis	10
Turnor Crow	10
Wells	10
Production	242
Average about	13½

SUMMIT MARION AND RIXFORD.

Borden, Oak Shade Oil Co	10
Borden, Bowers & Hall	10
Mather, C. B. Whitehead, No. 4	12
" Shear Bros. & Braunshnager	15
Thurston, Judd & Glass	10
Holt, F. E. Hart	12
" P. T. & W. C. Kennedy, No. 10	12
" " " " 11	15
Smith, M. A. Andrews	12
" Kenox Bros	12
Allen, Wm. Doc, No. 8	15
Ingraham, Robert Gregg	15
Chambers, Hazelwood Oil Co	12
Book, " " No. 31	25
" " " " 32	25
Bingham, Mina Oil Co	12
Wells	15
Production	214
Average	14

TRAM HOLLOW.

Middough, Blackmar & Jackson	12
Duke, Coffin & Co	10
Noble, O. Noble	10

OIL VALLEY.

Hamlin, Daniel, No. 14	15
Duke, John J. Dunn	5
Wells	14
Production	52
Average	13

STATE LINE.

Angell, Angell Oil Co. No. 25	16
Howard, Foreman & Lawton	20
Angell, Hogan & Murphy	10
" Johnson	15
" R. Jennings & Co. No 15	15
" Keiley & Weston	15
" Tucker Bros	15
" Stewart & McDonald	20
Mangh & Co	10
Barse, Jennings	10
" Union Oil Co	15

INDIAN CREEK.

M. Loup, James O'Neil	10
" Hart & Hicks	10
" Benson & Benny	10
W. Loup, Peck, Freeman & Follett	15
Campbell, Boyard & Scyfany	10
Sims, Bradford Oil Co	10
" Bradford Oil Co	10
Hamlin, Chautauqua Oil Co	12
Keys, Greenlee & Decker	10
Wells	19
Production	247
Average	13

MEEKS CREEK.

Wheeler, Galey Bros. No. 42	10
Kearing, John L. McKinney & Co	10
Wells	2
Production	20
Average	10

FOUR MILE.

Kansas Branch Duke	10
McCartney, W. B. McCartney	15
Van Campen, Quintet Oil Co	20
" Quintet Oil Co.	15
" Franchott Bros	12
" Geo. Merrill No. 12	10
Fink	10
Buzzard, Waeeie Oil Co	18
J. Waters, Williams & Gar No. 5	12
Shattuck, Welsh & Van Shaick	20
" " "	24
" Eaton & Howe	20
Wells	9
Production	155
Average	17

KINZUA.

Union Oil Co, Union Oil Co	40

SUGAR RUN.

Conover, Wright & Co	dry
Wells	2
Production	40
Average	20

BIG SHANTY.

Bingham 169, Dent Oil Co. No. 14	40
" " " 15	50
" " " 16	50
Dent " " 8	30
" " " 9	25
Bingham 174, Keshewauka Oil Co., 21	20
" " " " 25	20
Sullivan Waugh & Porter No. 2	15
" Potter, Thompson & Co	12
Dent, P. C. L. & P. Co	15
Moody, lot 60, E. A. Boyne & Co. No. 2	5
" " "	15
" Sarah Bernhardt Oil Co	15
Wells	12
Production	307
Average	25½

COLE CREEK AND BINGHAM.

M. W. & H. Pu, W. W. Thompson	15
Bingham 407, Johnson & Co	12
" Lots 453 and 454, Bayne, Fuller & Co., 37	50
" 453 and 454, Bayne, Fuller & Co., 38	75
" 453 and 454, Bayne, Fuller & Co., 39	70
" 453 and 454, Bayne, Fuller & Co., 40	60
Bingham Lots 453 and 454, Bayne, Fuller & Co., 41	65
" 465, Bayne, Fuller & Co.	60
" 470 and 471, Aiken & Whiting, 7	25
" 470 and 471, Aiken & Whiting, 7	20
" 478, M. Murphy	40
" Sampson & Forman	20
" " "	40
" Cumulative Oil Co.	15
" Marshall & Smithman	15
Wells	13
Production	557
Average	43

MISCELLANEOUS.

Forest County, Cornwall	dry
Independence, Golden	dry
Friendship, Boden & Co	dry
Wyoming Valley, Wyoming Oil Co	dry
Corry, Corry Oil Co	dry
Wells	5
Production	0

ALLEGANY—Wells Completed.

GENESEE.

Lot 7, Genesee Oil Co	15
8, H. J. Norton	25
8, H. J. Norton	20
8, Willet & Lovel	25
8, Willet & Lovel	15
8, Willet & Lovel	25
8, J. C. Smythe	30
8, J. C. Lineman	20
8, Thomas Kernan	20
8, Johnson & Co	30
8, Foot & Dougherty	20
8, Merrill & Perrin, 2 wells	45
8, Curtis & Co	20
8, Jones & Boughton	20
8 Reed & Co	20
16, Hardson & Colmus	20
16, Dusenbery & Co	15
16, Vaddergrift & Miller	15
16, Buzzell & Johnson	45
16, A. P. Turner & Co	25
16, Carlin & Golden	20
22, Greenlee & Anderson	10
Wells	24
Production	504
Average	21

WIRT.

Lot 17, Anderson & Gamble	25
17, Taylor & Co	20
17, Koch Bros	10
17, W. B. Reeder	20
25, Fertig Bros	20
25, Barnsdale & Biety	25
33, Jack McLeod	20
33, Allen & Taylor	20
33, Geo. V. Foreman	75
33 Hawley & Sloan	30
W. H. Gable	50
Wirt Oil Co	25
33, Fox & Keavanaug	20
33, "	20
33, Gardner Oil Co	5
33, McCray & Braeze	20
Lot 33, C. Mulkins	10
41, Scott & Jones	30
41, Smith & Co	20
41, Gilbert & Co	40
41, St. Joe Oil Co	30
41, Galey & Young	30
41, Dayton, Fairbanks & Co	25
41, Hogan & Co	20
41, Wellman, Miner & Pitts	30
41, Taylor & Mattock	25
41, Jonas Jordan	25
Sweeney & McKean	15
Baum & Son	25
Cotterell & Richardson	40
Carroll Bros	40
R. Dodds	25
41, Bliss & King	25
41, Huff Bros	20
41, Equitable Oil Co	25
41, "	30
41, Gillfellan & Co	25
41, Jordan & Murray	25
41, Davis & Clemminger	20
49, D. B. Whipple	40
49, "	70
49, Finnagan & Nelson	70
49, Richardson & Jones	100
49, Huff & Ege	25
49, "	40
49, A. C. Smith & Co	40
57, T. J. Vandergrift	25
57, "	40
57, "	40
57, A. H. Painter & Co	40
57, John M. Percival	30
57, Johnson & Co	25
57, Loan & Thompson	40
57, "	35
57, "	40
57, Lynch & Snider	49
Wells	57
Production	1780
Average about	29

BOLIVAR.

Lot 8, Skinner Oil Co 4
8, Morse & Conklin 10
8, Taylor & Allen 15
8, Empire Gas Co 15
8, Hardison & Co 12
8, Globe Oil Co 10
15, John Morgan & Co 10
21, J. B. Bradley & Co ..... dry
23, Campbell & Allen 20
24, Mooney & Galy 20
24, Milligan & Co 20
24, Nicholson & Christy 20
23, " " 25
24, John on & Co 20
24, Fisher Bros 15
24, And.rson Bros 15
31, Coast Bros 30
32, Barnsdall & Duke 25
32, " " 30
32, Hardison & Collins 20
32, " " 18
32, " " 25
32, C. C. Chamberlain 30
32, Black & George 30
32, " " 40
32, " " 40
32, Willman & Smith 30
32, " " 35
32, Kansas Oil Co 20
32, " " 40
32, " " 35
32, Sawyer & Co 35
32, Bradly & Green 35
32, Bell, Lupher & Co 30
32, John Cochran 20
32, " " 39
39, Lynch, Snyder & Co 30
39, Harding & Co 25
40, Gilbert Oil Co 25
40, " " 30
40, Fertig Bros 20
40, McCannont Oil Co 40
40, Lafayette Oil Co 35
40, Meldrum & Co 40
40, " " 30
40, Forgie & Co 25
47, Manhattan Oil Co 15
47, J. Varney 25
47, " 20
47, Huff & Ege 20
48, Wallace & Mattison 35
48, " " 30
48, Whitehill & Co 30
48, Crawford & Co 25
48, Brawley Bros 30
48, Frank Palmer 25
55,
56, Smith & Zeigler 45
56, I. E. Dean 25
56, " 35
56, Marvin & Finnegan 35
56, McCalmont Oil Co 60
56, " " 75
56, " " 25
56, " " 20
56, " " 30
56, " " 40
56, Hays, Book & Gartland 35
56, " " " 30
56, " " " 30
Richardson Oil Co 20
63, Smith & Co 15
63, " " 30
63, Cooper & Giles 20
64, " 30
64, Grenlee & Anderson 125
64, " 75
64, Hoover, Thompson 30
64, Balliatt & Co 30
64, " 30
64, " 30
64, Ballard & Co 40
64, " 54
64, A. H. Painter 30
84, " 35
64, Russell & Co 25
64, W. L. Hardison 30
64, J. C. Lineman 30
64, S. M. Reed 25

Wells 83
Production 2521
Average 29

ALMA.

Lot 1, Webster & Son 4
1, Hardison & Co 6
4, C. C. Chamberlain 10
4, Scott & Elliott 10
4, O. P. Taylor & Co 10
17, W. T. Lewis & Co 12
17, O. P. Taylor & Co. No. 7 2
17, " " No. 8 12
18, Anderson, Oter & Co 15
18, " " " 18
38, G. D. Westervelt 8
39, W. Chambers 25
40, Deweese & Co 12
49, W. F. Jones 12
Morse & Co r2

Wells 15
Production 175

CLARKSVILLE.

Lot 9, Hardison, Collins & Co 12
Lot 9, Gilchrist & Co 10
9, Blystone & Co 10

Wells 3
Production 32

ALLEGANY--Wells Drilling.

GENESEE.

Lot 7, Laughlin & Co ..... drilling
8, H. J. Horton ..... 200, 40 ', 2 rigs
8, Willets & Lovel ..... 500, 300, 4 rigs
8, C. E. Lineman ..... 500, rig
8, Johns n & Co ..... rig
8, Buzzell & Johnson ..... rig
8, Hays & Knox ..... 500, 400, 3 rigs
8, Kranston & Parkman ..... rig
8, Merrill & Perrin ..... 2 rigs, sand
8, Ellis & Co. 10 0, 530, 590, 1 rig, 2 rigs bldg
8, Morr son & Co ..... rig
16, Canfield & Thompson ..... rig
16, Hardison ..... 8 0, 200, 3 rigs
Dusenberry & Co 600
16, Canfield & Co. 500
" ..... 80 .
16, Vandergri t & Miller ..... 2 rigs
16, Jones & Co. ..... 240, rig
16, Buzzell & Johnson ..... 1 rig, 2 rigs bldg
16, A. P. Tanner ..... sand
16, Carlin & Golden ..... 400, rig
16, Blacksmith Oil Co 600
16, Book & Rhodes ..... 200, 300, 4 rigs
22, W. H. Stale 300
22, Martin & Co. ..... rig
22, Willets & Co. 300
24, R. R. Armor ..... rig
24, Willets & Cransten ..... rig
29, Willets & Cranston 600, 900
30, Stevenson & Streeter ..... rig
30 Roach & Dower ..... rig, 800
86, Smith & Shorts 800

Drilling 29
Rigs 39

Total 68

WIRT.

Lot 17, Andersou & Gamble ..... drill
17, Taylor & Co 10 0
17, " 300
17 " ..... rig bldg
17, Koch Bros 600
17, " ..... rig bldg
17, John Bryan 400
25, Fertig Bros ..... rig bldg
25, Bradley and Randall ..... rig
25, Rne & Shoemaker ..... rig
25, Manhatton Oil Co. ..... rig
25, Whitney ..... rig bldg
25, Hooker ..... rig 600
25, White & Co. 2 rigs 600
25, Leonard Black & Co 300
33, Jack McLeod 500
33, Allen & Taylor ..... rig
33, Geo. V. Foreman 600
33, " ..... rig bldg
33, Hanley & Sloan 500
33, W. H. Gable ..... rig bldg 600
33, Wirt Oil Co ..... rig
33, Knox Bros ..... rig 500
33, W. C. McCray & Breeze ..... rig 500
33, C. Mnlkins ..... rig 600
33, Patty & Bliss ..... rig 800
33, " ..... rig 600
41, Smith & Co, ... 200 sand
41, Frankenstean & Co. ..... 2 rigs up
41, Gilbert & Co ..... rig
41, Steel & Booth ..... sand
41, Hogan & Co ..... rig
41, Wellman, Pills & Minor 4 wells drill
41, John Jordon ..... rig
41, Sweeney & McKean 800
41, Baum & Son ..... drill
41, Cottrel & Richardson ..... rig
41, Carroll Bros. rig 650
41, Huff Bros. & Ege ..... rig
41, McCalmont Oi. Co ..... sand
41, " " ..... sand
41, Equitable Oil Co, ... 500 600
41, Gilfillan & Co, ... 500 rig
41, Mallony & McNulty, ... 800 600
41, Cranston & Co 600
41, Buzzell & Co ..... rig
41, Kinkaid & Co, rig 200
41, Davidson & Co ..... rig
49, Ward & Gilgan ..... sand
49, D. B. Whipple, rig. 400
49, Finnegan & Nelson, 1,0 0 ..... rig
49, Richardson & Jones 600
49, " " ..... rig
49, Huff & Ege, rig ..... sand
49, " " ..... rig bldg
49, A. C. Smith & Co 800
57, T. J. Vandegrift 500
57, " " ..... rig
57, " " ..... rig bldg
57, A. & H. Painter & Co ..... sand
41, Richard-on & Lester ..... rig bldg
41, Taylor & Co ..... rig
57, Johnson & Co, 800, 200 ..... rig
57, Loan & Thompson ..... sand
57, " " 2 rigs up, rig bldg
57, Lynch & Snyder 100
57, " " rig ..... 2 rigs bldg
57, E. W. Coleman ..... rig
Drilling 48
Rigs. 48

Total 96

BOLIVAR.

Lot 5, S. C. Adams 500
6, Burns, Brown & Co. 400
6, Wolf & Williams ..... rig, 900
8, Skinner Oil Co. ..... rig
8, Alfred Lee 4 0
6, Love & Co. ..... rig, 900
8, Empire Gas Co. ..... rig, 5 0
8, Hopkins ..... rig
8, Globe Oil Co. ..... rig
14, Allen & Campbell, ... rig, sand
14, Allen & Campbell ..... 2 rigs bldg
15, John Morgan 1 400
16, Wetherbee ..... rig
16, World Oil Co. 500
16, Wiser & Kinkaid 800
16. Scott & Moran ..... rig
28, J. B. Bradley & Co. ..... sand
32, Johnson Conroy ..... rig, 1000
24, Mackey ..... rig
24, Mooney & Galey ..... rig
24, Miller & Son ..... 1,000 rig
24, Nicholson & Chesley ..... rig
24, Christie & Co. ..... rig, 500
24, Johnson & Co. ..... rig bldg, rig
24, Boulton Bros. ..... rig, sand
24, Fisher Bros. ..... 400 2 rigs sand
32, Barnsdall & Duke ..... 2 rigs, 500
32, Hardison & Collins ..... 600, 300, 900, sand
32, Bickle & Cubbs ..... rig, 500
32, Charles Chamberlain ..... drill
32, Black & George ..... 2 rigs, bldg drill
32, Wellman & Smith ..... 2 rigs, rilling
32, Wellman & Smith ..... 2 rigs bldg
32, Kansas Oil Co. 1000, 400
32. Kansas Oil Co. ..... 3 rigs, drill
32, Sawyer & Co. 500
32, Bradley & Green ..... 2 rigs bldg drill
32, Bell, Lupher & Co. ..... rig bldg drill
32, John Cochran ..... 2 rigs bldg drill
32, C. C. Conroy ..... 500, rig, sand
39, Lynch, Snyder & Co. ..... rig
39, Harding & Co. 500
39, Hugh O'Neil ..... rig
39, H. P. Malone 1200
40, Gilbert Oil Co. 3 0, 900
40, Gilbert Oil Co. ..... 2 rigs up
40, Anderson & Co 600
40, McCalmont Oil Co ..... rig bldg
40, Lafayette Oil Co 500
40, " " ..... 2 rigs
40, " " ..... rig bldg
40, Smith & Zeigler ..... rig bldg 800
40, Meldrum 6 0 ..... rig
40, Forgie & Co ..... rig 1000
41, Gaskill & Co ..... sand
47, Manhattan Oil Co ..... 2 rigs
47, Jeff. Varney ..... rig, 500
47, Clarion Oil Co. ..... 400, 200, sand
47, Benton & Warner. ..... rig
48, Wallace & Mattison ..... 2 rigs
48, Whitehill & Co. ..... rig bldg
48, Crawford & Co ..... 2 rigs, 5 0
48, A. B. Wesner 700
48, Frank Palmer ..... rig, 400
48, Emerson & Co ..... drill
48, Ritts, Collins & Co ..... rig, 8 0
55, Heater & Stocks ..... sand
55, Flyn Bros. & Mackin 100
55, Thompson & Evans ..... sand
56, Smith & Zeigler. ..... rig, 8 0
56, Markam & Jordan 600
56, " " 800
56, " " ..... 2 rigs, rig bldg
56, Morris & Smith 500
56, I. E. Dean ..... 2 rigs
" ..... 1, bldg
56, Marvin & Finnegan ..... rig, rig bldg
56, McCalmont Oil Co. 500
56, " " 2 rigs bldg, 2 rigs up
56, Hays, Brook & Gartland ..... sand
63, Smith & Co ..... rig, 100
64, Cooper & Giles ..... rig, 100
64, Greenlee & Anderson 400
64, " " ..... 2 rigs
64, Frank Hoover ..... rig, 200
64, Ballett & Co ..... rig, 400, 1000
64, Ballard & Co ..... rig bldg, rig, 1000
64, J. C. Cornwall ..... rig, 500
64, A. & H. Painter. ..... rig, 500
64, Dyer & Springer ..... rig bldg, rig
64, Russell & Co ..... rig, 300
64, Reed & Co ..... rig, 800
64, W. L. Hardison ..... rig, rig
64, Anderson & Humphrey ..... 3 drill
64, " " ..... 2 rigs

Drill 73
Rigs 87

Total 150

ALMA.

Lot 1, Empire Gas Co ..... sand
1, " " 300
4, C. C. Chamberlain 350
4, Scott, Elliott & Co. ..... rig
4, Wellsville Oil Co 1000
5, Noble & Taylor 200
5, Noble & Arnold ..... rig
17, Taylor & Co 300
17. " ..... rig

Lot 17, Gaskall & Workman 300
18, Anderson, Otis & Co. No. 5 350
18, " " 6 ..... rig
18, " " 7 rig bldg
23, Dow Bros. & Co. 300
23, Breckenridge & Harper ..... sand
38, Ira W. Shirley 1300
39, Wm. Chambers 1000
39, Elliott & Co. 600
40, Duke, Norton & Raydure, 12 900
40, " " " 13 500
40, " " " 14 350
40, " " " 15 ..... rig
40, McCoy & Weeter 800
40, Morse & Williams 500
40, J. D. Downing & Co. ..... sand
53, Elliott & Co 550
58, J. Thornton 400
58, Fletcher & Co ..... rig
58, Pag & Co 850
121, J. D. Downing & Co ..... sand
121, " " ..... rig
121, Hefferman & McDonald ..... sand
121, " " ..... rig
121, " " ..... rig bldg
143, Donnell & Co ..... sand
143, " ..... rig
143, Col & Bush 450
143, Elliott & Co 650
144, Bunker & Fitzsimmons 600
144, Chandler & Co ..... sand
144, Merket & Co 900
144, " ..... rig
144, Love & Prescott 300
144, " ..... rig
Various parties ..... 5 rigs bldg

Wells drilling 13
Rigs up and bldg 20

Total 50

CLARKSVILLE.

Lot 1, Knox Bros. & Co ..... rig
8, Brett & Co ..... rig bldg
9, Galbraist & Hundley ..... sand
9, " 900
9, " ..... rig bldg
9, Humphrey, Pierce & Co, ... sand
9, " " ..... rig
9, Hardison, Collins & Co., No. 2 850
9, " " No. 3 500
9, " " 4 rigs bldg
9, Worthman 500
17, Parkman & Co ..... rig
1, Brett & Co 3 0
35, C. L. Hicks ..... rig

Wells drilling 7
Rigs up and building 10

Total 17

TUNA VALLEY.

Farm.	*Operator.*	*Depth.*
Leonard, Allen		rig
"	Leonard	rig
Scott, pur. L. Beatty & Co		100
"	Butts & Clark	800
"	Beatty & Haldeman	drill
"	Abbott & McGinnis	100
Seward, Cowles & Tracy		800
Ward, Ward		1000
"	L. Bowers	rig

EAST BRANCH.

E. T. Co., Benner & Casey ..... rig 900
Hawkins, P. C. L. & P. Co ..... rig
Newell, Book & Rhodes ..... rig
Drake, Zeigler & Co 200
" J. S. Book & Co ..... sand
" " ..... rig bldg
Cutting, Guy Drake, No. 1 100
Right, Kearley, No. 3 ..... rig
Deter, Emery Oil Co., No. 13 100
Pike, Book & Rhodes, No. 6 ..... rig
Foster, Tarbell & Shaffer No. 8 700
B. I. Taylor, Bovard & Seyfany ..... rig
" Breckenridge ..... rig
" Haworth ..... rig
" Risher & Zeigler ..... drill
Hawkins, Markum, No. 8 800
Clapp, J. M. Clapp, No. 41 1100
" " rig, rig bldg, drill
B. T. Taylor, J. L. McKinney & Co 600
Clark, Hanna 1400
Morris, Emery Oil Co 1000
" " ..... drill
" " ..... 2 rigs
Howard, Gardner ..... drill
Brown, Talley 1200
" Gardner ..... rig
DeGolia, Quintuple Oil Co ..... rig
Shady, Watson & Fulton ..... drill
Dykeman, Hashear & Co ..... drill
Jewett, Quintuple Oil Co ..... sand
" " ..... rig
Fuller, American Oil Co ..... rig, rig bldg
Gregg, Gregg & Co 200

WEST BRANCH.

Mack, Fisher ..... sand
Kissan, Williams ..... rig
" Chapin & Co ..... rig
Cramer, " ..... rig
Wagner, Bradley ..... drill
Gas Hollow, Heald ..... drill
" " ..... rig bldg
Stenson, Williams No. 5 ..... drill
Crooker, Lewis Deming & Co ..... drill
" Carl & Benton ..... drill

Drilling 32
Rigs 23

Total 55

QUINTUPLE TRACT.

Lot 13, Hall & Gibson 1600
23, Ralph Bros ..... drill
25, J. S. Wilson ..... rig 6 0
31, Settheimer No. 2 1700
39, Gillis & all 1300
49, Applebee ..... rig
54, B. F. Brenton 14 0
52, J. C. Wales No. 3 200
73, Apple Bros 15 0
73, Etna Oil Co., 2 350
175, D. Atwater & Co. ..... rig
176, H. A. Booth & Co ..... rig
180, A. F. Heald ..... rig bldg
181, Hazelton & Co. No. 3 1400
186, Vrooman McGraw ..... rig
208, Butler & Marton 1200
218, Gardner & Co ..... rig
249, Abbott & Proper 400
232, Wing & Co. No. 2 ..... 8 0
227, Geo. McCullogh & Co ..... rig bldg
241, Barnsdale Bros ..... rig
263, Clark & Foster, 2 ..... rig
273, " " 3 ..... rig
254, " " 2 1200
251, " " 3 ..... 12 0
254, " " 4 ..... rig
256, Lord & Dewolf No. 3 1400
258, Burrows & Co., 3 rig 900
261, Brown & Watson, 5 1600
265, Matthew Biggs & Co, 5 ..... drill
268, Gilbert & Shipman, 6 1200
2 2, Richards & Pickering, 5 1000
271, Eaton & Bundy, 2 ..... rig
276, L. H. Comley & Co, 4 1400
Salem, Quintuple Oil Co, rig ..... drill
1 9, Venture Oil Co. 1200
120, " " ..... rig
190, Straight 1200
197, Heald Seisco & Co ..... rig
241, Kane City Oil Co 550
237, Wing ..... rig
277, Dr. Baker ..... rig

Drilling 25
Rigs 19

Total 44

KENDALL CREEK.

Melvin, P. C. L. & P. Co. 54 rig, 55 ..... rig
Richardson, Smith ..... rig
Davis, Adams ..... drill
W. J. Boyd, Zane & Taylor ..... drill
Buchanan, Anchor Oil Co 1200
" " " ..... rig
Moore, P. C. L. & P. Co ..... rig
Whipple, B. N. Hurd ..... rig
Kellogg, Morrison & Co ..... sand
Mack, West ..... drill
Storms, Soeers ..... rig
Fisher, Peck & Freem, 2 ..... drill
" " " 2 ..... rigs
" Lauber & Co ..... drill
Dolbph, Tarbell & Co ..... rig
" Howe & Parker 100
Raub, Unknown ..... rig drill
" Pettibone ..... rig

FOSTER BROOK.

Bradley, Bradley & Ernest ..... drill
" " ..... 2 rigs
Tait, Tait ..... rig
McMurry, McMurry ..... rig
Willetts, Willetts & Young 300
" Smith & Co. 1500
" Brawly & Co. 1400
McKely, Dewitt Oil Co. ..... rig, drill
Snyder, Foxburg Oil Co. ..... drill
Bamm, Richardson & B. ..... rig bldg
C. B. & H., Wolf & Dreiblebis ..... rig, sand
" Bailey ..... sand
" M. S. Howe & Bro. ..... rig, 1000
" Lot 25, Treat & Porter field, rig bldg
" " " rig bldg
" Daeniels ..... rig
" A. J. Coldren ..... drill
" " ..... 3 rigs
" Smith & Toby 14 0
" Eighmy Bros. ..... rig
" Monroe & Brown 1400
" 33 Ralph Bros. 1000
" H. E Pickert ..... rig
" Argue Bros. ..... rig

SUMMIT, MARION AND RIXFORD.

Borden, Shear Bros. & Co. fishing in sand
" " " 8 0
" C. B. Whitehead No. 1 ..... rig
Mather, " " 6 350
" " " 7 ..... rig
Thurston, Wesley Chambers 950
" Judd & Glass ..... rig
Smith, Knox Bros ..... drill
" Sherman ..... drill
Irons, Duke Center Gas Co ..... rig
Anderson, Brennan & Freidel 550
Chambers, Hazelwood Oil Co ..... rig
Book, " " 400
" " " 450
Ingraham, Robt. Gregg ..... sand
" " ..... rig
Longfellow, P. T. & W. C. Kennedy ..... rig
Ingham Lease, Craig ..... spud
Cummings & Zimmer ..... rig
Whitcomb, Hardly Able Co ..... rig

Drill 33
Rigs 31

Total 64

TRAM HOLLOW.

Borden, Stewart & Co 1400
" Unknown ..... rig
" " ..... rig bldg
" Tanner ..... rig

OIL VALLEY.

Hamlin, Daniels, 15 ..... drill
" " ..... rig
Duke, Dunn ..... rig
" Unknown ..... rig bldg

STATE LINE.

Barse, Hays & Hastings 1600
" " 1000
" " ..... rig
Angell Oil Co., Angell Oil Co., 24 1500
" " 26 1400
" " ..... 7 rigs up
Fullerton, " ..... 4 rigs up
Borden, Van Vleck 400
" Foreman & Sapton 13 0
" " " 1700
Angell, Hogan & Murphy ..... rig
" Perrine ..... rig
" Waugh & Co ..... rig
" Burns Bros ..... drill
" M. J. Tuffts ..... sand
" Piper & Danley 1300
Barse, Downing ..... rig
" Ryan & Co ..... drill

Drill 15
Rigs 30

Total 45

INDIAN CREEK.

Loup, Downing & Co., No. 13 ..... rig rig
" James O'Neil, No. 10 ..... rig, drill
" 17-18, Hart & Hicks, No. 5 ..... rig, drill
" Benton & Co ..... rig
" Hardison & Co ..... drill
" Peck & Freeman ..... drill
" " " ..... rig
Hamlin, Mallory ..... drill
" Chautauqua Oil ..... rig bldg
Pine, L. Eckerly ..... rig
Palmeter, Purtill Bros., No. 11 ..... drill
" " " " 12 ..... rig
" Leonard ..... drill
Weston, McNulty ..... rig
" Unknown ..... rig

Drilling 7
Rigs 11

Total 18

MEEKS CREEK.

Gale, Curtis & Taylor, 5 ..... drill
" " 6 ..... rig
" Moore & Watson ..... rig
" Thompson & Canfield ..... rig
Ayer, Unknown 1500
Cook, Cook 1200
Hamlin, Forest Oil Co., 21 500

FOUR MILE.

McCartney, McCartney ..... rig
Donahue, Brown & Norris ..... rig
Van Campen, Quintette Oil Co 1200
" " " 1400
" " " 200
" " " ..... drill
" " " ..... 2 rigs
Stevens, Dudley & Palmer ..... rig bldg
" Book & Rhodes ..... rig
" Blatchley & Farrel 1800
Van Campen, Stowell ..... rig
" Geo. Van Campen 2 rigs up
" Franchot Bros. 1800
" Rockway ..... rig
" Franchot Bros ..... rig drill
" Geo. Merrill No. 14 ..... sand
" E. W. Funk 1400
Waters, Calkins & Kelty ..... sand
Buzzard, Waccie Oil Co, 12 600
" " " rig bldg ..... rig
Johnson B. Alvord ..... drill
" Argue & Cobb, fish 1600
Jo. Waters, Howard & Baum 1200
" Gillespie ..... rig
Harbell, Coleman, Bell & Co, 11 ..... sand
" " " " 12 1600
" " " " rig 400
Shattuck, Curtis & McCormick, 5 500
" " " 6 ..... rig
" Welsh & Vanschaick 250
" " " ..... drill
" Eaton & Howe, 2 ..... drill
" " " ..... rig bldg
Hollander, Brown Bros. shut down 1200
Howard, Evans, ... 5 sets timber out
Stevens, unknown ..... rig
Carr, Curtis, rig 140

Drill 29
Rigs 24

Total 53

KINZUA.

Bingham, J. M. Tait, No. 2 ..... rig
" J. M. & Thos. Tait ..... rig
U. Oil Co., pur. J. M. Guffy, shut down..sand
" " " 33 ..... rig
" Union Oil Co 31..... rig
" " " 32..... rig bldg
Carter & Hurd, Carter & Hurd..... rig
Patterson. P. C. L. & P. Co..... 1400

VANSCOY SECTION AND SUGAR RUN.

Anderson, Parker & Co..... 8 0
English, Dew Drop, No. 4..... rig
" Unknown..... rig
" " ..... rig bldg

BIG SHANTY.

Binghman, Lot 169, Dent Oil Co, No 17, 17 rig bldg
Dent, Dent Oil Co., No. 7..... drill
" " " 10..... sand
" " " 11..... sand
" " " 12..... 200
" " " 13..... drill
Bingham, Kishewauka Oil Co., 26, ... drill
" 176, Fertig, 3 1100
" " " 4 ..... rig
" 153, J. J. & T. J. Vandegrift..drill
Lot 93, Lockwood & McKeiit ,No. 4 ..... rig
93, " " No. 5....sand
Sullivan, Waugh & Porter, No 3....drilling
" Mills & Mullen, No. 4..... 1800
" " No. 5.....drilling
" " No 6..... rig
" " No. 7.....rig bldg
" Book & Tait..... 1000
" Potter, Thompson & Co....drilling
Bingham, Lot 91, Union Oil Co..... 200
Taylor, Mills & Mullen..... drilling
Hamlin, Minard Run Oil Co., No. 8.....1400
" " " " 9.....1300
" " " " 10..... 500
" " " " 11.drilling
" " " " 12..... rig
Dent, Whitney & Wheeler, No. 13...rig bldg
" " " 400
" " " ....drilling
" " " rig and rig bldg
" P. C. L. & P. Co..... 700
" " ..... rig
" Narrow Gauge Co.....1000
" " ..... rig

MOODY TRACT.

Moody Land Co., No. 76..... 250
" " " 77.....drilling
" " " 78.....drilling
" " " 79..... rig
" " " 80.....rig bldg
" Lot 53, Jennings & Co., No. 1..... rig
" 60, Boyn, Clark & Co., rig.....1000
" 6 , Minard Run Oil Co., shut down.....sand
" 67, J. W. Euber & Co., No. 3...1500
" 67, Johnson & Kittenger.....sand
" 67, J. Alshouse & Co.....1500

Drilling..... 35
Rigs..... 22

Total..... 57

COLE CREEK & BINGHAM.

Co. O. Co., Columbia Oil Co.....rig
Bingham, Lot 189 Hamlin & Bose.....drill
" " " ..... rig
Rew, McDonald..... 1400
M., W. & H., J. Bennings n & Son.....rig
" Grace & Spain..... 400
" For st Oil Co. 6,..... 200
" W. W. Thompson.....drill
Bingham, Lot 265, Tucker & McCormick, drill
" " 387, Kennedy.....rig
" " 407, John on & Co..... 800
" " 453-4, Boyne, Fuller & Co., 42 drill
" " 465 " 34, sand
" 178 & 9, Cumulative Oil Co..1400
" " " ...600
" " " ... rig
" " " rig bldg
" 4070-1, Aken & Whitney.....250
" " " ... 7.00
" " " rig bldg, 2 rigs
" 461-5, Munhall & Smithman 14, sand.
" 478-9, M. Murphy 6,.....1200
" " " 7.....drill
" " " 8..... rig bldg
" 468-9, Cumulative Oil Co. 1...1800
Bingham, Lot 468-9, Cumulative Co. 2...1700
" " " 3...1000
" " " 4...drill
" " " 5....rig
" " " 6 rigbld
" 466, Cornell.....drill
502, Foreman & Union Oil Co., shut down .sand
491, " " " No. 8.. rig
491, " " " No. 9.. rig
491, " " " No. 10 . rig
491, " " " No. 12 . rig
409, J. L. McKinney.....2 rigs up
390, Forest Oil Co..... 200
G. & V. V. pur. Union Oil Co., No. 7....sand
" " " " No. 16.....rig
" " " " No. 17.....rig
" " " " No. 18.....rig
" " " " No. 19.....rig
" " " " No. 25.....rig
" " " " No. 26.....rig
" " " " No. 27.....rig
Lot 488, Johnson & U. O. Co., No. 25.....rig
488, " " " No. 28.....rig
488, " " " No. 32.....rig
Simpson, Geo. V. Foreman..... 1800
" " " " 600
" " " " .....drill
" " " " .....rig
" " " " .....rig bldg
Lot 391, A. J. Thompson, No. 11.....1400
391, " " No. 18..... rig
Brown & Keller, Duthill, No. 2..... rig

Drill..... 28
Rigs..... 32

Total..... 60

MISCELLANEOUS.

Elk County, Warrant 2532, Jack..... 2200
" 3663, T. W. Larson & Co.. 1200
" 3655, Hallock & J..... drill
Forest County 3171, Towler..... drill
" 3665, T. W. Larson ..... rig
" 3668, " ..... rig
Almond, Dr. Sweet..... drill
Andover, Wellman & Co..... drill
Potter County, Germania Oil Co..... 800
" J. M. Tait, No. 2..... 800
" Unknown..... rig
Forestville, Various parties.....2 rigs bldg
Steuben county, N. Y., Shaffer & others..drill
" Unknown..... rig

Drill..... 9
Rigs..... 6

Total..... 15

Summary.

DRILLING WELLS.

	DRILL.	RIGS.	TOTAL.
Quintuple	25	19	44
E. & W. Branches and Tuna	32	21	53
Kendall Creek, Foster Brook, S., M. and Rixford,	33	31	64
Tram Hollow, Oil Valley State Line	13	23	36
Indian Creek,	7	11	18
Meeks' Creek, Four Mile	29	24	53
Kinzua and Big Shanty	35	22	57
Cole Creek & Bingham	28	32	60
Miscellaneous	9	6	15
Total	211	188	399
Totals Nov. 30th	215	218	433
Decrease, Dec.	4	30	34

ALLEGANY.

	Drill	Rigs	Total
Genesee	29	39	68
Wirt	48	48	96
Bolivar	74	87	161
Clarksville	6	10	16
Alma	30	29	50
Totals	187	204	391
Totals Nov. 30th	155	200	355
Increase Dec. 31	32	4	36

WARREN AND FOREST.

	Dril	Rigs	Total
Clarendon and Sheffield	32	40	72
November	41	53	94
Decrease December	9	13	22

LOWER COUNTRY.

	Dril	Rigs	Total
Clarion	6	4	10
Butler and Armstrong	8	3	11
Venango	2	2	4
Byrom Centre	7	6	13
Totals	23	15	38

SUMMARY.

	Wells	Rigs	Total
Bradford	211	188	399
Allegany	187	204	391
Warren and Forrest	32	40	72
Lower Country	23	15	38
	453	447	900

WELLS COMPLETED.

	Wells.	Prod.	Dry.	Av.
Tuna Valley, East Br nch, West Branch,	28	334	1	12
Quintuple tract	22	429	—	14 7-9
Kendall Creek, Foster Brook,	18	242	—	13½
Summit, M. & R	15	214	—	14
Tram Hollow	2	22	—	11
Oil Valle	2	30	—	15
State Line Indian Creek.	19	247	—	13
Meek's Creek	2	20	—	10
Four Mile	9	155	—	17
Kinzua	2	40	—	20
Big Shanty	12	307	—	25½
Cole Creek and B	13	500	—	43
Miscellaneous	10	50	—	5
Total	164	2597	1	

ALLEGANY.

	Wells.	Prod.	Dry.	Av.
Genessee	29	595	1	21
Wirt	62	1788	--	29
Bolivar	87	2521	1	29
Alma	15	175	1	11½
Clarksville	3	36	--	12
	196	5115	3	

LOWER COUNTRY.

Warren	28	336	1	12
Lower Country	17	137	3	8
	45	473	--	

SUMMARY.

	Wells.	Prod'n.	Dry
Bradford	164	2,597	1
Allegany	196	5,115	3
Warren	28	336	3
Lower Country	17	137	3
Grand Totals	405	8,185	10
Grand Average, about			20
Grand Average November, about			15
Wells completed, November..	389	5,729	8
Increase December	16	2,456	

GRAND SUMMARY.

WELLS COMPLETED.

	—Nov. 30.—		—Dec 31.—	
	Wells.	Prod'n.	Wells.	Prod'n
Northern field	180	2659	164	2597
Warren	31	372	28	336
Allegany	159	2608	196	5115
Lower Coun'y	17	107	17	137
Total	389	5746	405	8185
Increase wells				16
Increase production				2239

DRILLING WELLS.

	—Nov. 30.—			—Dec. 31.—		
	Drill.	Rigs.	T.	Drill.	Rigs.	T.
N. field	202	250	452	211	188	399
Warren	41	53	94	32	40	72
Lo'try	45	22	67	23	15	38
Alleg'y	155	200	355	187	204	391
Miscel.	10	8	18	—	10	10
Totals	433	533	966	453	457	910
Increase drilling wells						4
Decrease rigs						76
Total decrease						72

The Warren Field.

In the Clarendon and Sheffield districts operations were retarded somewhat during December and at the close the volume was lighter than at the end of November. Following is a list of the wells completed:

Tract.	Operator.	Prod.
77,	Stough on & Co.	28
77,	George Gives	15
77,	Munn, Wickle & Crosby, No. 2	25
77,	Ferguson & Allshouse	dry
79,	Capt. Butler	15
79,	Duke & Harris, No. 8	20
79,	March & Kuhn	25
80,	Eleason & McCracken, No 6	15
80,	Barnsdell Bros., No. 2	25
105,	Branch & Williams	12
105,	Atchinson & Cullis, No. 5	12
105,	James Roy, No. 5	12
105,	Archbald & Co., No. 4	15
106,	Dimick & Foster, No. 3	14
106,	Seymour & Sherman, No. 4	14
106,	Conrath & Wright	10
106,	James Roy, No. 6	15
107,	Malone, Nos 2 and 3	20
498,	Kelley & Richards No. 2	15
396,	Webb & Horton	10
528,	Eagan & Co. No. 2	18
528,	Anchor Pet Co. No. 5	16
400,	Tiggert & Co	10
557,	Bryan & Hoffmann	12
78,	Beaty Co. 12	15
498,	Conway & Fandie	22
Lulin s,	Union Oil Co. No. 4	15
77,	Union Oil Co. No. 2	12
107,	Kay No. 2	15
106,	Lapham & Co No. 8	15
106,	Schomldom & Co. No. 3	15
106,	George Givens	15
105,	Short & Co.	12
528,	Reed & Co	15
528,	Wales	20
	Wells completed	36
	Production	420

Wells Drilling.

CLARENDON.

Farm.	*Operator.*	*Depth.*
Lot 35,	Ackerly, Benton & Co. No. 2	700
55,	Beatty	rig
55,	Union Oil Co. No 7	rig
76,	Givens & Barr	rig
77,	Clinton & Co. No. 1	1000
77,	" " 2	800
77,	Ed. McDermott, No. 2	sand
77,	" " 3	rig
77,	Geo. Marsh & Co. No. 1, shut down	sand
77,	O. Hoffman	900
77,	Stoughton	rig
77,	Wynkoop	rig
78,	"	2 rigs
78,	"	rig bldg
78,	Beaty	drilling
79,	M. Butler & Co. No. 2	rig
79,	Marsh, Kuhn & Co., No. 6	rig bldg
80,	T. Barnsdall & Co. No. 3	rig
105,	Singer & Co., No. 2	500
105,	Brinton & Co. No. 1	rig
105,	McCleery & Coltenbaugh No. 1	200
Lot 105,	Atkinson & Co. No. 4	rig
105,	Geo. Given No. 1	100
105,	Branch & Co. No. 1	200
105,	Short, Oyster & Co. No. 3	300
103,	Archbold & McClure No. 6	rig
106,	J. Roy No. 7	rig
106,	Geo. Given No. 2	rig
106,	Conrath Bros., No. 2	200
106,	Coltabaugh & Townsend, No. 3	200
106,	F. H. Rockwell & Co. No. 7	rig
107,	F. B. Malone, No. 3	200
108,	Eureka Oil Co. No. 2	800
108,	Grandin & Hague	rig
108,	Duke & Co.	rig
101,	Grandin & Hague	rig
162,	Clark & Armor	rig
162,	Chas. Verback, No 2	900
407,	R. Thompson	rig
498,	Hopewell & Bell, No 2	rig bldg
498	Kelly & Richards No. 3	100
498,	Ed. Eagan	rig
498,	Elias Katz, No. 3	rig
499,	Archbold & McClure	600
499,	Tiggert & Co. No 2	rig bldg
491–5,	Sherman & Estep, No. 6	rig
528,	O'Connor & Reed	sand
528,	E. Eagan, No. 3	rig
528	W. B. Ash, No. 1	200
528,	R. Cochran	100
528,	Armstrong & Speer No. 5	200
528,	Col. Drake & Co., No. 2	500
529,	Dimick & Co	drilling
529,	Forker & O'Connell	900
616,	Dimick & Co	rig
Clark & Jackson		rig
Tract 2837,	Clark & Armor, shut down	900
Bugbee,	John Bryan	rig
Riddlesperger,	Riddlesperger Bros., 2	300

NORTH WARREN AND GLADE.

Jackney,	Jessie Johnson	rig
Pittsfield,	Unknown	800
Watson,	Brown Bros	rig
Roy,	James Roy	drilling

SHEFFIELD.

Lot 408,	Melvin, Walker Wetmore & Co.	500
408,	Magee & Horton, No. 5	rig
408,	" " 6	rig
138,	Emerson, Shank & Emery No. 2	rig bldg
Williamson,	D. Emery & Co	400
Lot 212,	Truby & Co.	rig
368,	Magee & Horton	rig
396,	Milvin, Walker, Wetmore & Co.	200
397,	Clark & Armor, No. 4	rig bldg

FOREST COUNTY.

Tract 2,730,	Reno Oil Co	rig
Fox,	Kerberger & Co	sand
Bear Creek,	J. Cornwall	1700
	Drilling	33
	Rigs	41
	Total	74

LOWER COUNTRY.

Wells Drilling.

CLARION.

Farm.	*Owner.*	*Depth.*
Black,	Jeanett	sand
Edenburg,	Callahan	rig
Weller,	Friar & Co	600
Edenburg,	J. D. Callahan	rig
Egypt,	M. E. Hess	300
Call,	Smith & Butler	800
Stratton,	Vanness	200
Lewalter,	Lewalter Bros	900
Richey Run tract,	E. Crawford & Co	500
Wentling,	Wentling & Putman	150
Fox,	Fox & Fink	rig

BUTLER AND ARMSTRONG.

Parker,	J. C. Widger	1000
Shakley,	Hagerman & Co	900
Gibson,	Monroe & Watson	600
Thomas,	Thomas & Newmaker	rig
Dufford,	K. H. McBride	750
Crow,	Baldridge Oil Co	1000
Eichenlaub,	Phillips Bros.	14 0
Hummel,	Simcox & Myers	500
Morgan,	Simpson & Co	1100
Leonard,	Leonard & Parker	400
Bell,	Shidemantle	300
Robinson,	A. T Scott	200
Stanley,	Orton	sand

BYROM CENTRE.

J. H.	Crawford, J. H. Crawford	300
H.	Kohlmeyer, Goodrich & Co	sand
H C.	Sanderson, Daniels & Dougherty	1000
"	Duncan & Newton	rig
Miller,	Adams, Storey & Tash	rig
Sutton,	Thos. Hays	600
Middleton,	Young & Co	1000
"	Martin & Co	rig
D. R.	Crawford, Steelsmith & Co	rig
"	Porter & Phillips	1000
McCandless,	J. P. Crawford & Son	500
E.	Robinson, E. Robinson & Co.	rig
Grant,	Grant Bros. & McElree	300

VENANGO.

Gordon,	Smith	800
Alcorn,	Standard	1000
Church lot,	Porter	1200
President township,	Crawford	800
"	"	rig
"	Clapp	drill
Simcox,	McAbee	rig
Rynd,	Camp	drill
Kaufman,	Kaufman	400
Alison,	Fisher	sand
Furnace,	Fisher	rig
Salem,	Kentville Oil Co	drill
	Drill	37
	Rigs	13
	Total	50

Lower Country.

Completed Wells.

CLARION.

Farm.	*Owners.*	*Production.*
Richley Run Tract,	Friar & Co	8
Baily,	Heeter & Bo	15
Dan Ritts,	Thomas Griffin	dry
Baker,	Oak Shade Oil Co	8

BUTLER & ARMSTRONG.

Hugh Morgan,	Parker & Co	8
Kate Stanley,	Orton & Co	12
Parker,	J. A. Parker & Co	dry
Jamison,	Jamison & Co	dry
Brady Bend,	Hunter & Cummings	10
McBride,	McBride & Co., No. 2	5
McAlweee,	Whitman & Co., est	5
Gibson,	Monroe	6

VENANGO.

Caley,	Kugler & Co. No. 3	10
Kauffman,	Kugler & Kauffman No. 1	8
Allison,	Fisher Bros.	8
Unknown,	Smith	12
	Wells	17
	Production	117

ANALYSIS OF NITRO-GLYCERINE COMPOUNDS.

THE managers of an Austrian mine who were not satisfied with the quality and the effect of some of the nitro-glycerine compounds they were using had some analysis made to ascertain the cause. Herr W. Goebl presented the results at a meeting of the Austrian Society of Engineers. "Blasting gelatine" contained the following:

Collodium cotton	9.99	8.91	9.60
Nitro-glycerine	86.78	87.55	87.90
Water and loss	3.23	3.54	2.50
Total	100.00	100.00	100.00

This showed that the explosive contained less than the amount of nitro-glycerine represented, or 90 per cent. A peculiar thing was noticed with a lot of dynamite, No. 1, which was used in sinking a shaft, and which was found so poor that its use was stopped. After having been laid aside for a long time, it was found to have lost all explosive force, although an analysis showed the following result:

Kieselguhr	32.69 per cent.
Nitro-glycerine	65.29 "
Water and loss	2.02 "

As the best authorities state that dynamite is fit for use years after having been made, this discovery was somewhat striking. No good explanation is offered, however.

OIL REGION INVENTIONS.

TORPEDO FLOW CONTROLLER.

THE recent invention of Victor Gretter, of this city, is deserving of an extended notice. It is a "flow controller" for controlling the first and subsequent flows of a well after it is torpedoed, and should come into general use, as it doubtless will eventually.

In many wells the oil and gas are driven out from the pipes or casing with great velocity, and the momentum of the stream bursts pipes, breaks down the tanks into which the stream is directed, and often raises the casing from its position and lets the water and mud in the well, causing great loss of material and damaging the productive capacity of the well. Especially is this the case immediately after torpedoing, when the accumulated liquid is suddenly forced out by the pent-up gas and accelerated by the force of the torpedo. So unavailing and disastrous have been the efforts to control the flow at such times that it has heretofore been customary to allow a well to waste its first and heaviest production upon the ground and in the air, for the column of escaping oil often shoots to the height of 200 feet, and is wafted by the wind over acres of ground and covering everything within a large radius with oil. Besides the great waste of oil and the damage to ropes, machinery, buildings and adjacent property, there is great danger of fire on such occasions, many of the wells being located in the cities and towns throughout the oil fields, and a majority of the wells are located so closely to other wells and tanks as to be a standing menace to surrounding property. Many disastrous fires have originated in this manner and many lives have been sacrificed. The object of the invention is to provide safe and effective means for controlling the flow and thus prevent such loss and accidents. The nature of the invention consists of a pipe of larger diameter and capacity than the casing, forming a long and gradual turn, and held in place by means of chains and guys, which are almost instantly fastened to the derrick sills. When a well is finished a torpedo is lowered to the bottom and exploded, the oil in the hole acting as a tamping device. The explosion of the torpedo forces the column of oil out of the hole.

The means usually employed to save the oil were a pipe of uniform size with and attached to the casing by means of an elbow, which has been so unsuccessful as to be discontinued. The "flow controller" obviates these difficulties by attaching to the casing head the pipe already described as having a gradual turn and larger dimensions than the casing. The pipe is lengthened by attaching other joints or pipes, each one gradually growing larger until a telescopic joint is formed. This insures the gradual enlargement outward from the well. The downward curve prevents the stream of oil from striking the sides of the tank and breaking it in pieces. The whole machine can be placed in position before the well is shot. When the torpedo manipulator arrives on the ground he can lower his torpedo, drop the weight, and in one-quarter of the time it takes the flow to ascend to the derrick the "controller" can be placed in secure position, ready to do its very important part.

Mr. Gretter has already used it successfully in this city on some wells on Congress street, where the danger to property was very great. He has had many offers to go to Richburg and use his machine in that burg of derricks, but so far he has been prevented by his other engagements here. The patent covers nine different points. It is numbered 250,232 and dated November 29, 1881.

PETROLEUM GAS.

M. H. BUTLER.

IN the first number of THE PETROLEUM AGE your readers are treated to a very able and highly interesting discussion on "Petroleum as Fuel." The question is so elaborately and scientifically treated by the accomplished writer of that article that, to trespass upon that particular subject, would be venturing farther than common prudence would permit. For this reason then, and with the hope and expectation that the lady may continue her very interesting discussion of the fuel question, the writer has preferred to treat of the question upon general principles, and from the starting point of our superabundant supply. Large stocks and excessive production constitute the stock in trade of certain combinations, and by means of which they have manipulated the business to suit their pleasure. Query—why this superabundant supply? Well, the short answer is, no demand for it. Petroleum is generally known and used as a liquid illuminant. Very little effort has been made to introduce it into other and valuable uses. As a matter of fact, the principal interest taken in the application of petroleum to new uses must be credited to outsiders having no property interest in oil in

any manner whatsoever. The producers, and people of Oildom generally, have never given this very important question a passing thought. Now and then we hear the wish expressed that some means might be presented to us whereby these large stocks could be worked off and the resultant oppression removed. Occasionally we read in the columns of *outside* papers of some successful experiment or practical application of petroleum to a new and important use; but even then we are too skeptical to believe it. We know better, and though we are inclined to credit the statement, we have only to talk it up a little when certain alleged newspapers immediately proceed to disabuse our minds of such absurd ideas! We would not include in the general list of skeptics those who for years have had abiding faith in the ultimate triumph of petroleum as a competitor with coal in its varied uses. As a justification for what may seem a reflection upon the good common sense of the producers as a body, the writer has abundant personal experience to bear out all that the foregoing implies. Among the earliest moves made by the producers as an organized body, was one suggested and adopted by the Producers' Council in 1872, viz.: the appointment of a "Committee upon New Uses for Petroleum." It was made the special duty of that committee to investigate thoroughly, and report at length, all obtainable data and information looking to a more extended use for our then insignificant surplus.

It is not at present the purpose of the writer to enter into any detailed review of the investigations made by the aforesaid committee; suffice it that a very thorough investigation into the matter of new uses for petroleum, was made shortly after the committee was duly appointed; but, for good and sufficient reasons, no report was made. The writer is personally familiar with all the details of the committee's researches, and will improve the opportunity and be rejoiced to state the principal facts in connection therewith. From the beginning, and down to the year 1872, there existed no cause sufficient to spur the producers beyond the beaten path, supply and demand generally regulating the price. But, after the year last named, owing to causes well understood by the trade, "supply and demand" did not enter into the calculation in any sense, and a history of the cause would of itself form a most interesting book.

But we are reminded that the question "superabundant supply" is now before the house, and that new uses for petroleum demand our first consideration. That petroleum can be used easily and profitably in a gaseous form, has been so clearly and generally demonstrated as to leave the question settled beyond controversy. That it can, also, be easily and profitably utilized for heating purposes, seems so easy of comprehension as to hardly warrant a demonstration. With reference to the first fact, let us ask ourselves the simple question, what is petroleum? and the answer is, *rock oil*—not kerosene or coal oil. And, further, what is meant by *rock oil?* Certainly not that the rock, so called, is the originating cause, or that it contains within or of its own nature or formation, the constituent elements to produce the oil. The rock, then, is simply the receptacle for the condensed gases evolved beneath, and constantly pressing towards the earth's surface. Possibly some of your readers may incline to some other theory; as, for instance, the decomposition of vegetable or other matter long since buried beneath the earth's surface. But, whatever the theory as to the primal cause, the substantial fact remains unquestioned that crude petroleum is a pure liquid hydro-carbon, and, therefore, possessing in its crude form the essential elements of a superior gas producer.

Crude petroleum is especially rich in carbon. Illuminating gas is simply carbon and hydrogen intimately mixed and burning in combination with the oxygen in the air. The oxygen of the air, meeting with the hydrogen, forming a new combination developing heat, thus rendering incandescent the particles of carbon which produce the light or flame. Hydrogen is the *vehicle*. The oxygen supports combustion and the carbon produces the light. As the life-supporting power of the atmosphere is proportioned to the quantity of oxygen present, so, also, is the luminosity of gas proportioned to the quantity of carbon present. The writer, of course, uses only the simplest form of expression, not professing the most intimate knowledge of signs and formula, but merely desiring to make the subject easy of comprehension to the simplest mind. The important point to be urged in favor of petroleum as a gas producer is its *pure quality*. It is entirely free from sulphur and other deleterious matter common to coal and other gas producers, and makes, by proper process, a fixed gas requiring no other treatment than the application of a proper degree of heat to convert it from a liquid to a fixed or proper gaseous form.

When it is understood that the cost of purify-

ing the gas in general use, so as to render it all merchantable, forms a large—a very large—item of cost in its manufacture, it will be readily seen that the quality of our oil is an important matter for consideration.

We will now proceed to consider other and important points in favor of petroleum as a gas producer. The question of bulk or relative space required to contain or store it: One ton (2,240 pounds) of coal will occupy a space equal to about forty-three cubic feet, and will produce 10,000 cubic feet of sixteen-candle gas.

One barrel (42 gallons) petroleum will occupy a space equal to about eight cubic feet, and will produce 4,000 cubic of an eighty-candle gas. *Coal gas* is burned at the rate of *five cubic feet for each burner per hour*, gives a sixteen-candle light, and 10,000 cubic feet will be consumed by 1,000 burners in *two hours*.

Petroleum gas is burned at the rate of *one cubic foot for each burner per hour*, gives a sixteen-candle light, and 4,000 cubic feet will be consumed by 1,000 burners in *four hours*. It will thus be seen that one barrel of petroleum is about equal to one-sixth the bulk of a ton of coal, and yet yields double the amount of light. The article is, even under the present excessive rates for transportation, more easily handled, and transported at a cost much less than coal can be. These, together with other important recommendations for petroleum as a gas producer, the writer in the future will beg to present for the consideration of your readers.

THE REAL ESTATE MARKET.

THE December number of THE AGE contained an interesting article on the above subject from Mr. T. B. Hoover, a dealer of wide experience in the real estate business in Bradford. From that article we learn that the sales of the eleven months to December 1st amounted to $4,290,300. During the month of December they amounted to $500,000, making a grand total for the year 1881 of $4,790,300. This of course does not include all transactions but approximates the grand result of the year's transfers. There could be no more satisfactory proof of a healthy condition of affairs in the oil country than this statement offers. We have tables of production, stocks, shipments, exports, and in fact of every branch of the business possible of tabulation, but by none could we more easily determine the "spirit of trade" than by tabular statements of real estate transactions. By them we judge of the condition of the pulse of capital. Whenever transactions are numerous business improves. Money is then floating at more reasonable rates, and supply dealers as well as all other merchants find it much easier to do business. On the other hand, when purchasers are few there must be a cause for it, and that may generally be ascribed to a distrust of future values. A new strike in any section, remote from former developments, would cause a halt in progressing transactions and probably burst up many of them. There is perhaps no other part of the business that more quickly determines the direction of feeling. The tide of trade in old wells rises or falls with the daily forecast. During December the inquiry for lands upon which to drill was very brisk, and the general complaint was that there was little to be had. The prices asked for production were so high as to preclude the possibility of transactions in many cases, even where purchasers were the most anxious. The prices asked ranged from $250 to $400 a barrel for gross yield. Of course in large transactions these figures did not rule. During December there were a number of "bundles" of wells sold, the Forest Oil Company, the Union Oil Company and the Hazlewood Oil Company having been the largest buyers. In some cases their purchases amounted to over fifty wells, as in the instance of the Noble transfer, at Duke Center, to the Forest Oil Company.

With the present outlook there are favorable chances for a still further advance in values, as it has come to be believed that the near future will reveal a striking *barrenness* in drillable territory. This condition of affairs seems to exist at the present time in the McKean district.

In Allegany there was also a noticeable decline in the number of transfers during December, owing to the fact that the field had become tolerably well circumscribed, and lands were held at much higher rates than dealers felt willing to pay. However, several large transactions occurred, and though the total number fell somewhat short of that for November, yet there was a strong disposition manifest to purchase even at the elevated rates. It is estimated that trades amounting to 1,400,000 dollars took place during the last month of the year—the largest being a sale to parties in New York by Davis, Murphy & Jones, which amounted to $400,000. Territory in the most prolific sections is now held at from $500 to $1,000 an acre without production. This is, of course, for the very choice lots. Ordinary lands—those which are capable of yielding from 10 to 25 barrels a day

to a well—are held at figures ranging from $250 to $450 an acre. These lands are supposed to come within the well defined limits of the producing field, and those bordering or lying along the outskirts are obtainable at prices much below those named. The diagram published in the November AGE gives a most correct idea of the territory now commanding the attention of the trade. The outlines are fairly and thoroughly established by this map. The territory along the girdle line is light and can be had at prices to suit purchasers.

In the Warren field there has been some activity during the past two months, but usually at a valuation far below that of either McKean or Allegany. The best territory of the former has never been considered choice; and, as a consequence, prices have never reached that altitude that has characterized those of the latter fields. Good producing lands, or lands promising a fair production, can be had at from $150 to $250 an acre, and some that are considered a little dangerous or doubtful, though moderately certain, are purchasable at even lower rates. In the Sheffield section the present owners bought at less than $100 an acre, when secured in fee, and when leased at one-eighth royalty the bonus paid was usually $50 an acre. No sales are reported to third parties, and as a consequence no particular or specified valuation has been set. Altogether the business; notwithstanding the low price of oil, seems to be pointing toward a better state of affairs. Unless some unforeseen development occurs by which a large district is opened for the drill, there is no probability of a depreciation in the value of oil region real estate or other properties.

OIL REGION GEOLOGY.

BELIEVING that an article on the above subject would be read with great interest, THE AGE undertook negotiations with Mr. John F. Carll, Assistant State Geologist of Pennsylvania, and received from him the following interesting letter:

In reply to your request, I have to say that my experiences among oil men have led me to conclude that they care very little about the geology of oil. Not one operator in a hundred will take the trouble to watch his drillings to assist geologists in their efforts to trace out the underground structure of the oil country. They see no necessity for that kind of work, and so long as plenty of productive territory can be had to drill upon, will not even take time to read what they consider "scientific vagaries." I do not feel, therefore, that your magazine would be improved by anything that I might write, and as I have my hands full just now in studying up my summer's work, must beg to be excused from contributing, for the present at least.

I am very much obliged for your kind remembrance in sending me the first number of THE PETROLEUM AGE. It is a capital beginning, and I see no reason why your enterprise should not prove a success.

THE *Petroleum World* ceased to exist on the last day of December, 1881, after an existence of about a year and a half. It was a very good paper, but seemed to lean away from the standard erected at its birth, viz., the furnishing of oil news and data as a specialty. The *World*, however, will be missed by the oil trade. It was a well conducted and well edited journal with the exception noted.

CONSIDERABLE excitement has prevailed during the past ten days at Honesdale, Wayne county, this State, over the striking of a heavy gas vein in a well that has just been drilled near that place for oil. The gas passes up through the column of water, with which the well is filled, and it sometimes throws the water high in the air. Honesdale is situated in the anthracite coal regions, which accounts for the presence of so much gas. The well, however, does not seem to answer the ends for which it was brought into existence.

THE ALLEGANY FIELD.

TABLE SHOWING THE PROGRESS OF DEVELOPMENTS AND PRODUCTION OF THE ALLEGANY [N. Y.] FIELD.

MONTH.	No. wells completed	Dry	Production	Average per well	Daily prod'ction of Field	Drilling	Rigs	Stocks in wooden tanks	Stocks in iron tanks
Total 1880	8	42	76	9½	76	4	6		
January	4	2	18	9	94	4	5		
February	4	1	24	6	112	4	8		
March	5	2	60	12	162	4	7		
April	3	1	20	10	170	5	6		
May	4	1	48	12	212	20	21		
June	14	8	130	9¼	327	24	35		
July	22	5	275	12½	588	47	57		
August	53	17	586	11	1080	62	68		
September	63	11	910	14½	1740	105	118		
October	96	5	1432	15	2896	164	198	38000	108891
November	154	10	2732	17½	5180	155	200	84666	142216
December	160	2	2720	17	7123	170	210		
	590	107		12					

PETROLEUM EXPORTS FROM 1864 TO 1881, INCLUSIVE.

THE quantity of Petroleum and the quantity and value of Petroleum Products exported from the United States, during each of the fiscal years from 1864 to 1881, inclusive, as reported by the Bureau of Statistics, are as follows:

Year ended June 30.	EXPORTS.											
	Mineral, crude (including all natural oils without regard to gravity.		Mineral, Refined or Manufactured.						Residuum (tar, pitch, and all other from which the light bodies have been distilled.)		TOTAL.	
			Naphtha, benzine, gasoline, &c.		Illuminating.		Lubricating (heavy paraffine, &c.)					
	Gallons.	Dollars.	Gallons.	Dollars.	Gallons	Dollars.	Galls.	Dols.	Galls. *a*	Dols.	Gallons.	Dollars.
1864	9980654	3864187	438197	154191	12791518	6764411	-------	-------	--------	------	23210369	10782689
1865	12293896	6868513	480947	173943	12722005	9520957	-------	-------	--------	------	25496849	16563413
1866	16057943	6015921	673477	188825	34255921	18626141	-------	-------	--------	------	50987341	24830887
1867	7344248	1864001	224576	34175	62686687	22509466	-------	-------	--------	------	70255481	24407642
1868	10029659	1564933	1517268	167873	67909961	19977870	-------	-------	--------	------	79456888	21810676
1869	13425566	2994404	2673094	445770	84403492	27636137	*b*134532	51122	--------	------	100636684	31127433
1870	10403314	2237292	5422604	564864	97902505	29864193	*b*6871	2611	--------	------	113735294	32668960
1871	9859038	1971847	7209592	746797	132608955	34138736	*b*59632	22660	155474	14770	149892691	36894810
1872	13599768	2307111	8092635	932160	122539575	30566108	541419	211287	438186	41724	145171583	34058390
1873	18439407	3010050	9743593	1487439	158102414	37195735	748699	277966	781074	79566	187815187	42056756
1874	17776419	2099696	9737457	1038622	217220504	37560995	1244305	404244	1827798	142299	247806483	51254815
1875	14718114	1406018	11758940	1141440	191551933	27030361	1173473	313656	2752848	187103	221955309	30078568
1876	20520397	2220268	14780236	1442811	204814673	28755638	963442	303863	2581404	193206	243660152	32519786
1877	26819202	3756729	15140183	1816682	262441844	55401132	1601065	497540	3196620	317355	309198914	61789438
1878	27936727	2694018	16416621	1411812	289214541	41513676	2304624	639381	3968790	316087	358841303	46574974
1879	25874488	1927207	18411044	1192229	367325823	31783575	5162835	1039124	4967000	276490	423964699	36218625
1880	28297997	2180413	15054361	1258780	331586442	35999862	2487681	655468	3307038	210726	378310010	40305249
1881	44690998	--------	20342664	--------	----------	---- ---	--------	-------	--------	------	490626000	34343260

As a given number of gallons of refined petroleum represents the product of a larger number of gallons of crude petroleum, it is necessary to reduce the exports of petroleum to their equivalent in crude oil, in order to arrive at a knowledge of the percentage of the total product of mineral oil exported. It has been ascertained as a result of a careful computation, that the quantity of petroleum and its distilled products exported during the year ended June 30, 1878, was equivalent to 407,482,175 gallons of crude oil; or, in other words, that the exports of petroleum constituted about 66 per cent. of the production. A larger percentage of the mineral oil product of the country is exported than of any other product except cotton.

a Barrels reduced to gallons at the rate of 42 gallons to the barrel. *b* Estimated.

CRUDE OIL MARKET.

MONTHLY AND YEARLY AVERAGE PRICE OF PIPE LINE CERTIFICATES OR CRUDE OIL AT THE WELLS.

A. D.	Jan.	Feb.	March	April	May	June	July	Aug.	Sept.	Oct	Nov.	D'cmb'r	Yearly
	Ave'age	Ave'age	Ave'age	Ave'age	Ave'age	Ave'age	Ave'age	Ave'age	Ave'age	Ave'age	Ave'age	Ave'age	Av'rge's
1859									20 00	20 00	20 00	20 00	20 00
1860	19 25	18 00	12 62½	11 00	10 00	9 50	8 62½	7 50	6 62½	5 50	3 75	2 75	9 60
1861	1 00	1 00	1 00	62½	50	50	50	25	20	10	10	10	49
1862	10	15	22½	50	85	1 00	1 25	1 25	1 25	1 75	2 00	2 25	1 05
1863	2 25	2 50	2 62½	2 87½	2 87½	3 00	3 25	3 37½	3 50	3 75	3 85	3 95	3 15
1864	4 00	4 37½	5 50	6 56	6 87½	9 50	12 12½	10 12½	8 87½	7 75	10 00	11 00	9 87½
1865	8 25	7 50	6 00	6 00	7 37½	5 62½	5 12½	4 62½	6 75	8 12½	7 25	6 50	6 59
1866	4 50	4 40	3 75	3 95	4 50	3 87½	3 00	3 75	4 50	3 39	3 10	2 12½	3 74
1867	1 87½	1 85	1 75	2 07½	2 35	1 90	2 62½	3 15	3 40	3 55	2 50	1 87½	2 41
1868	1 95	2 00	2 55	2 82	3 75	4 50	5 12½	4 57½	4 00	4 12½	3 75	4 35	3 62½
1869	5 75	6 95	6 00	5 70½	5 35	4 95	5 37½	5 57½	5 50	5 50	5 80	5 12½	5 63¾
1870	4 52½	4 52½	4 45	4 22½	4 40	4 17½	3 77½	3 15	3 25	3 27½	3 22½	3 40	3 89
1871	3 82½	4 38	4 25	4 01	4 60	3 85½	4 79	4 66	4 65	4 82½	4 25	4 00	4 34
1872	4 92½	3 80	3 72½	3 52½	3 80	3 85	3 80	3 58½	3 25	3 15	3 83½	3 32½	3 64
1873	2 60	2 20	2 12½	2 30	2 47½	2 22½	2 00	1 42½	1 15	1 20	1 25	1 00	1 83
1874	1 20	1 40	1 60	1 90	1 62½	1 32½	1 02½	95	95	85	55	61½	1 17
1875	1 03	1 52½	1 75	1 36½	1 40	1 26½	1 09	1 13	1 33	1 32½	1 44	1 55	1 35
1876	1 80	2 00	2 01	2 02¼	1 90½	2 01¾	2 24½	2 71	3 81	3 37½	3 11	3 73	2 56¼
1877	3 53¼	2 70	2 67½	2 58	2 24	1 94⅜	2 07½	2 51	2 38	2 56¾	1 91	1 80	2 42
1878	1 43	1 65¼	1 59	1 37½	1 35¼	1 14	98¾	1 01⅜	86½	82½	89⅜	1 16	1 19
1879	1 03	98	86¼	78½	76	68⅜	69⅞	67⅛	69½	88½	1 05⅝	1 18⅛	85⅞
1880	1 10¼	1 03⅛	88¾	78	80	1 00	1 06¼	91	96	96⅞	91⅞	91⅝	94½
1881	95½	90⅜	83⅜	86¾	81⅞	81¼	76⅞	78⅝	93 3–16	94¾	83	84	85¾

THE OUTLOOK.

THE year 1881 was characterized by some very important changes in the producing department of the oil trade. During that time the Allegany county, N. Y., field was almost entirely developed, and the Clarendon, Barns and Blue Jay sections in Warren and Forest counties arose to the surface also. These constituted the principal developments of the year, though there were a few others of minor import in various portions of the McKean district. During the year there were 3,795 wells drilled throughout the region, 175 of which were dry holes. This leaves a total to add to the producing list of 3,620. To ascertain the balance sheet of this large number—the largest for any former year except 1880—it will be necessary only to estimate their probable expense, together with the amount of oil they have produced. To accomplish this it is only necessary to estimate the cost of each well when completed and put in condition to produce. Then by aggregating the list we obtain a grand total of expenditures for the year. On the other or "contra" side, in order to draw a correct balance, it will be necessary to estimate the production of each well for a period of six months, which is the average life of all the wells completed during the year. In the first place, we have a total of 3,795 wells completed. But of these 175 were dry, leaving 3,620 to add to the producing list. These have been yielding for half a year. How much have they produced? It is calculated that the average well will not exceed ten barrels a day for the period named. But in order that we may give the producer all the show possible in this calculation, we overestimate a little by giving each well credit for twelve barrels a day. The statement on these principles would therefore appear as follows:

Wells	3,795
Original cost of each	$ 2,500
Total cost	9,487,500

CONTRA.

Supposing that the oil which all of these wells produced was sold daily as obtained, the average price for the same period would be 86 cents. Then on this side of the ledger we would find this statement:

Wells	3,620
Production for six months, at 12 barrels each	7,906,080
Amount, at 86 cents a barrel	$6,799,228
Amount invested above returns	$2,688,272

Here we find that $2,688,272 has been deposited in the ground over and above all that has been drawn out. At first glance it might be presumed by some that this was a total loss, but such is not the case. It is shown, upon careful computation, that the average life of oil wells at the paying point is five years. Then we have four years' prospective production of these wells to repay the original investment and improve the financial condition of the owners. Therefore, supposing the average yield for the four years to be five barrels to each well, the result at that time should be about as follows:

Wells	3,620
Total yield for four years, at 5 barrels each	26,426,000
Deduct royalty one-fourth	6,606,500
Net production, barrels	19,819,500
Amount when sold at 86 cents	$17,044,770
Deduct amount invested first year above returns	2,688,272
Gross earnings for five years	$14,356,498
Deduct cost of attention	1,837,500
Net gains	$12,518,998
Average gain per well	3,458

This would appear very satisfactory indeed though the amount is light compared with estimates generally made of profits from oil wells.

This of course does not include expense account and many items of cost connected with the "personal" affairs of the average oil man in the conduct of his business. Were an estimate of these made the profits above deduced would be much smaller. Then, furthermore, there is the question of production, which seems to admit of doubt as to the amount credited to each well. But, nevertheless, it would appear that, as a rule, the business was even now paying the producer perhaps as largely as any other industry of the country. Were this not so, it is not likely that the display which the table of operations, found in another column, makes would be quite so immense.

During the month of December there were completed 405 wells in the petroleum regions. These were divided as follows: The northern field, 169; Allegany, 183; Warren and Forest counties, 36; lower country, 16. Of these 11 were dry, and located as follows: Northern field, 2; Allegany, 3; Warren and Forest, 3, and the lower country 3. It will be seen that Allegany now leads in the volume of operations, surpassing Bradford in the number of completed wells by 17. The average also of new wells about equals that of the big spouters of the Brigham estate and Moody tract in the days of their great achievement in the producing business. By this result the daily yield of the field has been increased to an extent quite unexpected. This appreciation more than maintained the decline of the Bradford field, though

it was not sufficient to sustain that of the entire region, and the result shows a decline of 1,200 barrels a day in the sum total. From this it is quite easy to form an estimate of what may be expected in the future, providing no other important section is discovered. It would seem utterly impossible to maintain the yield of the Bradford field at its present standing, even by the drilling of 200 wells per month, which will not occur during the winter season at least. Doubtless when spring opens there will be a revival of operations, but the territory yet to be drilled, as it now appears, is of that class from which but very moderate results at best can be expected. As seen by the table of operations, there was a decline in the number of completed wells during December, and there was also a decline in the number drilling and rigs up and building. Therefore, for the first month of the new year, a further depreciation in the volume of active operations should ensue, together with a comparative decline in the daily production of this field.

OF ALLEGANY.

Of Allegany's future it is somewhat difficult to form a correct estimate, even at this date. During the last two months of 1881 the drill was urged to an excessive degree in the richest portions of the field, and by a review of the table of operations it will be seen the great majority of the drilling wells are situated where they will do the most good in enlarging the aggregated yield at the close of the month. It has been suggested that January will witness the highest altitude to which the daily production will ever reach. This, however, will depend somewhat upon circumstances. Should the volume of active operations be largely increased it is hardly probable that a decline would occur in production until greater areas have become more effectually exhausted. In the December number of THE AGE a diagram giving an outline of the territory likely to prove productive was published, and by it a fair idea of the amount of drilling it will require to complete the work of the field was given. At present there are 530 producing wells, which is perhaps nearly one-third of the number that will be drilled in the field. But just where or at what point the new wells of each month are to fail to increase the total yield after supplying the deficiency caused by the decline of the old is a matter of speculation merely. Judging, however, from experiences of the past—which are always more or less valuable—the time for such a consummation is not very far distant. It may arrive in February, possibly not before March. On the first day of January the yield was estimated at 8,250 barrels a day, an increase of 3,070 barrels a day for December alone. This is, beyond question, the largest monthly increase the production will ever undergo. Elsewhere will be found an interesting table showing the growth of developments during the year past. No other field ever rose so rapidly from insignificance to form such an important factor in the calculations of the trade. And doubtless no other field ever "dropped out" more rapidly than will this when it shall have passed to the declining stage. It has enjoyed the happy—or unhappy—distinction of being the first new field that was "baptised" to the fullest extent in its youth by extraordinary quantities of nitro-glycerine. This has been the prime cause of the remarkable productiveness of wells whose indications have been very much inferior to those in other fields that yielded only moderate producers—from 10 to 20 barrels. The sand rock being quite porous and rather inclined, even the very best of it, to be soft and shaky, the effects of explosives are much greater than they would be in other sections where the rock is more compact. The fact that the field averaged 8,250 barrels a day for the month, proves that the production at the close was much higher. It is estimated about 10,000 barrels. Thus we find the Allegany field at the opening of the new year.

M'KEAN DISTRICT.

This field possesses no new or special characteristics. Southwest of Big Shanty a few miles, a well was drilled during the month by P. Kearns, and as yet has not been completed, and is preserved as a mystery. The character of the oil formation in the latitude, however, does not warrant an exalted opinion of future results. This particular feature was dwelt upon at some length in the December AGE, and there is no cause for change from the conclusions formed at that time. The well is situated nearly a mile southwest of a venture sunk early last spring by Whitney & Wheeler, on what is known as the Bullymore tract, adjoining the Dent lands on the south. The latter was considered a failure at the time, though there were some indications of oil. It is possible the well may yet be treated to explosive compounds and undergo a more thorough test. At all other points circumstances remain the same. There have been some land transactions on the western limits of the field along the State line, outside of former developments, and operations

are to be pushed to some extent. That region contains a large amount of gas, and as a result of drilling numerously this element seems to be exhausting rapidly. As the gas depreciates oil increases, which would indicate that the pressure of the former upon the sand rock acted adversely to the production of the latter.

During December there were many inquiries by dealers for oil property, and some of the largest transactions ever witnessed in this part of the region took place. In one instance—that of Murphy & Jones, who owned 36 wells on the Bingham estate, and sold them, with the property belonging, to New York parties—the terms of sale were $400,000, mostly cash. It has begun to be believed by the trade that the decline in production is more extensive than had been calculated, and as a consequence old wells are daily appreciating in value. The table of operations furnishes a correct picture of active hostilities, and further comment at this stage would be an unnecessary appendage.

WARREN AND FOREST.

In this field, the pressure brought to bear by unpleasant weather was the cause of a slight falling off in the volume of operations, though the number of completed wells exceeded the number for November by two. There were no important strikes, and no extensions were made to the producing area. The field, however, is not thoroughly defined. On the contrary, there are indications that other spots will be developed during the coming season, as it is presumed a few, at least, remain undiscovered. The daily yield of the district does not increase sufficient to cause apprehensions of a very extensive production. The wells drop off more rapidly, after the first day's yield, than in any other field now commanding the attention of producers. The average well cannot be placed above six barrels, and it is only a question of time when three barrels will constitute the multiplier in obtaining the sum total of all the producing wells. The map, which will be found on another page, points out the various pools already developed through the county, as also the limited deposit of Forest county.

LOWER COUNTRY.

In the lower field a few wells continue to be drilled, with varied results from dry holes up to fifteen barrel wells. Nothing new having been completed in the Baldridge section west of the town of Butler, in Butler county, there is of course nothing worthy of extended comment. The production of the whole region, from Tidioute to Butler, underwent a depreciation in yield during December much larger than characterized any previous month of the year. Many of the wells are not producing a barrel of oil per day. Of course these are not considered among the "paying" class. Yet the system of pumping by heads has been made so perfect as to enable the owners to continue to extract whatever the wells produce, little or much.

SUPPLY AND DEMAND.

In order to treat this subject fairly, one must be thoroughly conversant with the condition of affairs in the world outside of the producing regions. We are obtaining so many facts and figures in relation to supply and the sources thereof that the world is never far astray on this part of the subject. Our total yield at the present time, as seen by our production table, is about 76,642 barrels a day. And the question as to whether this can be maintained in the future, naturally follows next in order for discussion. The careful reader of remarks and examiner of the statistics from each section, can form conclusions to suit himself. They are furnished for that particular purpose. A few suggestions, however, might not come amiss, even after a careful perusal. There might be some things overlooked which might prejudice the mind and lead to false conclusions. When the array of active operations is spread before the eyes of the oil student, he is naturally led to conclude that, while such a state of things exist, there is no salvation for the trade—no hope of a depreciation of the amount of oil daily brought to the surface, which seems to be the principal anchor for the soul of the producer. But this is evidently a grave error. It is not so much the decline in production that is to bring new life and greater profit to operators as the opening of new and larger channels for the consumption of the article they furnish. It is not to be presumed for one moment that all the petroleum resources of this region have been developed. There are, on the contrary, perhaps, extensive areas yet to be discovered that may prove quite as prolific as some that have already yielded up their stores, and have entirely ceased to act as factors in the calculations of the trade.

The problem, however, which remains to be solved at the present time, is, what are the relations existing between supply and consumption? Glancing over the reports from all sections of the field, we find that there has been a steady falling off in the daily yield in all parts except Allegany county, N. Y., for several months past, and the same result is assured for several months to come, except perhaps in the Warren

field, which should undergo a further appreciation. The new wells that are to be sunk in the great McKean district will not serve to sustain the yield thereof. Allegany must very soon reach its greatest altitude, as indicated elsewhere, when we shall be left with a declining yield in all districts, and at the mercy of chance for the immediate development of fresh resources; such an event might not occur in a year, and before that time the stocks would be drawn upon daily. As shown by the tables below, the daily call from abroad during 1881 was over 41,394 barrels of crude equivalent against 27,818 in 1880—a remarkable increase. Then adding the estimate of home consumption, 15,000 barrels in round numbers, we have a total for 1881 of about 56,000 barrels per diem. During 1882 the ratio of increase may not be so large as in the year past, but doubtless it will augment to some extent. Supposing it to be fifty per cent. less, we would then have a foreign demand by January 1883, of nearly 50,000 barrels a day. The total supply, as shown by the production table, of the entire petroleum region, is 76,642 barrels, a falling off since December 1st of 1,250 barrels.

ALLEGANY STOCKS.

The stocks in the Allegany field were computed on the first of November, and again on the first of December and on January first. The following table shows the result:

	Stocks Nov. 1.	Stocks Dec. 1.	Stocks Jan. 1
In wooden tanks	38,000	84,666	180,200
In iron tanks	108,891	142,216	169,250
Totals	146,891	226,882	349,450
Increase December			122,568
Increase November			79,991
The United Lines shipped from the region during November			Barrels. 42,500
Lost and burned			12,000
Add increase of stocks			79,991
Total			134,491
Daily average			4,483

Production Calculation.

United Shipments Dec	150,238
Add increase stocks Dec	122,568
Add waste and fuel	4 250
Total production	277,056
Daily average Dec	8,937

In order that this average of 8,937 barrels should be maintained during the thirty-one days, the production on the last day of the month must have exceeded 10,000 barrels a day.

On page 69 an incomplete table of Allegany's production, prepared on the 18th of December, was inadvertently inserted before it was ready for publication. The figures given above are correct.

ABOUT EXPORTS.

Of forty-five foreign countries and ports to which petroleum is regularly shipped, but five took less oil this than last year. All the others received more than usual, and some increased their demands enormously. The ports and countries that show a slight decline are Bristol in Great Britain, Bremen in Germany, Denmark, Holland, and Venezuela in South America. Those of the greatest increase were Austria, Greece, Turkey in Asia, China and Japan, and some of the West India Islands. During the year 1880 but 750,000 gallons were shipped to Turkey in Asia, and in 1881 the consignments consisted of over 4,000,000 gallons. In the East Indies the ratio of increase was also very great, being fully one-third more than during 1880. Of course it is not to be expected that this rapid increase will continue for all time. There may be a season very soon of "stagnant waters," which would not be a surprising event. Nevertheless, we can behold nothing on the horizon of this great industry but prospective improvement and prosperity. The year 1881 was certainly marked with credit lines of great magnitude. Millions of gallons reached destinations never before marked out, and hundreds of thousands of people who had never perhaps even heard of it, prior to the time named, were introduced and became substantial friends.

Following is the table of foreign shipments for the year compared with 1880:

	1881. Gallons.	1880 Gallons.
From Boston	10,828,141	5,072,565
Philadelphia	110,544,639	54,824,149
Baltimore	18,215,958	15,173,275
Richmond (estimated)	216,500	1,305,641
New York	367 860,039	264,792,578
Total all ports	507,665,277	341,168,208
Increase 1881		166,497,069

Reduced to barrels of 42 gallons crude equivalent, the statement would be as follows:

	Barrels.
Total per day for year 1880	27,818
" " " " 1881	41,394
Difference per day in favor of 1881	13,576

[NOTE.—The daily production as given in this magazine is figured from data which calculates the gross amount of oil. But it should be remembered that there is a shrinkage account which is rapidly absorbing stocks. This is variously estimated, some placing it as high as 2,000 barrels per day, which would of itself consume, in thirty-three years, all the oil above ground at the present time.]

PRODUCTION TABLE.

SHOWING THE TOTAL YIELD OF THE PENNSYLVANIA OIL FIELD FROM SEPTEMBER, 1859, TO JANUARY, 1882.

Years.	Jan.	Feb,	Mar.	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Totals.
1859									10	15	18	28	2,188
1860	30	50	89	215	500	1,000	2,000	2,500	3,000	3,500	2,000	3,000	547,489
1861	3,201	4,041	4,800	5,400	6,000	6,100	7,100	8,500	7,000	5,150	5,514	6,716	2,147,562
1862	6,000	5,300	7,400	8,000	9,400	9,000	8,500	11,000	13,000	10,565	8,053	7,238	3,104,200
1863	6,200	6,400	7,000	5,500	6,000	7,603	9,022	8,100	9,200	7,120	11,500	10,260	2,700,100
1864	8,100	6,300	4,500	5,000	7,000	5,100	5,600	5,700	7,180	5,545	10,100	10,320	2,220,250
1865	5,900	5,800	5,000	7,500	8,000	8,000	7,400	6,350	6,400	6,800	7,600	10,900	2,560,600
1866	9,200	9,100	5,000	7,100	8,100	9,500	9,350	9,440	12,000	10,400	11,000	11,165	3,441,000
1867	10,900	8,100	9,000	10,100	10,500	9,000	10,100	10,000	10,100	7,660	9,155	8,313	3,458,000
1868	8,200	9,400	8,100	9,300	11,000	12,400	13,000	11,800	10,250	8,225	8,000	7,150	3,540,100
1869	8,100	8,500	10,000	11,000	13,000	13,000	13,560	14,000	13,600	13,000	11,200	10,625	4,225,000
1870	11,348	11,802	11,509	12,400	15,990	13,400	13,800	15,950	18,203	18,000	17,061	15,990	5,288,950
1871	13,500	13,300	13,082	12,950	13,054	13,882	14,900	15,866	15,555	15,889	15,599	15,841	5,275,581
1872	17,943	17,894	15,680	16,221	17,402	12,140	16,933	17,440	16,598	18,450	25,942	20,630	6,397,174
1873	20,550	21,460	21,830	22,260	24,632	26,361	23,406	30,900	32,500	31,343	33,584	34,680	10,005,049
1874	32,800	30,940	29,760	28,104	29,442	31,222	33,987	32,000	29,461	29,944	29,231	28,101	10,817,250
1875	27,900	26,509	26,012	23,009	23,000	23,805	24,991	23,940	23,800	23,900	23,821	23,594	8,675,966
1876	23,102	25,440	23,560	23,800	24,628	24,400	24,890	25,300	25,900	26,400	26,500	25,900	906,490
1877	26,930	27,560	28,860	32,060	36,000	37,440	39,210	42,100	41,321	41,200	39,900	40,120	12,919,130
1878	39,200	39,900	39,200	40,100	41,111	40,820	41,200	42,900	43,999	44,480	45,200	43,900	15,251,461
1879	44,000	44,830	47,960	50,810	52,911	55,600	56,911	59,940	61,498	60,980	58,750	58,231	19,851,903
1880	59,982	63,890	66,215	68,063	72,080	73,104	73,794	74,980	71,941	77,491	76,112	74,030	26,266,982
1881	73,030	69,060	73,900	75,245	79,000	82,460	81,900	79,100	78,231	77,971	77,892	76,642	99,010,898
Total twenty-one years to December 31st, 1881													177,807,838

AN OIL TOWN BESIEGED.

AMONG the various tribes of Indians who occupied this portion of the State in the years before and after its settlement by the white man, was that of the Cornplanter. This was the first tribe, it is said, who paid attention to the cultivation of the soil. Cornplanter, the chief, had headquarters near the mouth of Oil Creek, and owned all the land in that section, having acquired it by grant from the commonwealth. It is now stated that the descendants of the chief, Cornplanter, believe that the property on which Oil City, which is situated at the mouth of the creek, now stands still belongs to them, and Jonathan Pierce, the present chief, has been in the city looking up the matter. According to the story their claim dates back to 1791. In that year a grant of land on which that city is built, was made by the commonwealth to Cornplanter. In 1819 Cornplanter made a deed of this land to William Kinnear and William Connelly. The validity of this deed is what they seek to attack. The deed was signed by Cornplanter personally, his wife not signing. This, they claim gives her the right of dower. Again, they claim the grant was in such a shape that Cornplanter could not dispose of it. In other words, it was given to him in trust for his tribe, and he had no right or authority to dispose of it. The nature of the grant remains to be determined, but if it be as they claim they have, as a tribe, an unquestionable title, according to good legal opinion.

They talk of moving about one hundred wigwams down and settling in Oil City. They will then let the city sue them out of possession. It would make lively times in the city, doubtless.

RICHBURG OIL.

IT is stated by refiners, who have manufactured the oil of the Allegany field by itself, that it is an inferior illuminant and that it is extremely odorous. So much so, in fact, that when treated as other oils it still retains a very unpleasant smell, somewhat similar to the Canadian product. As produced, Allegany oil is heaver than that of Bradford, having a density of from 38 to 40 degrees, that of the latter being from 45 to 47. But when mixed with the Bradford production there seems to be no depreciation in percentage of refined and none of the offensive odors are discovered. The united pipe lines, which take care of all the yield of that district have, therefore, done the producers a great kindness in so connecting their lines as to run the production into receiving tanks containing Bradford oil. By this process the crude becomes thoroughly mixed, and in the manufacture no disturbing elements are experienced.

HEAVY OIL.

WELLS COMPLETED.

Lot.	Operator.	Production.
Gillingham	J. H. Cain	1
Blakely	W. C. Howe & Co	2
Lobb	C. E. Smith	2½
Smith	Acme Oil Company	3
Smith	Acme Oil Company	2
Smith	Acme Oil Company	2
Smith	D. Grumm	2
Galloway	Jerry Hurley	2
Galloway	H. Shaw	2
Ward	Crawford & Co.	1
Plumer	Galena Oil Company	dry
Point	W. B. Lesh	1
Two-mile run	Hilliands	dry
Wells		13
Production		20½
Dry		2

WELLS DRILLING.

Lot.	Operator.	Depth.
Galloway	H. Sheasley	rig
Fitzgerald	Allen & Son	sand
Smith	D. Grumm	rig
Bleakley	W. C. Howe	rig
McQuaid	Galbraith & Co.	375
Cundle	Galbraith & Reamer	rig
McCalmont	H. James	rig
Fee & Cunkle	Hineman	rig
Galloway	J. Hurley	400
Galloway	J. Hurley	350
Galloway	J. Shaefar	300
Point	John Turk	rig
Wigart	Thomas & Co	sand
Wells drilling		6
Rigs up and building		7
Total		13

"PETROLEUM AS FUEL."

PARKERSBURG, Dec. 24, 1881.

Editor Oil, Paint and Drug Reporter:

ALTHOUGH it may be true that the correspondent of the PETROLEUM AGE has solved the problem of burning petroleum safely, steadily and economically, a statement of the comparative values of coal and petroleum may go far toward accounting for the tardy introduction of the latter as a substitute for coal. The superior virtues of petroleum as a fuel have often been stated in a general way, and so have those of water; so that it might not be altogether unreasonable to imagine the light, heat and power of "the coming man" to be embodied in a cake of ice. The known calorific value of hydrogen is the sole basis for the claims of water as a fuel, and is one element on which the superiority of petroleum over coal is founded. The fair correspondent of THE AGE says it is necessary to catch your hare before you cook it—may it not be possible that, in this case, the value of the hare will not compensate one for the perils of the chase?

The advantages of petroleum over coal may be divided into two classes—first, the larger proportion of hydrogen in a given weight; second, the greater ease with which it can be converted into vapor for complete and rapid combustion.

In order to give petroleum the greatest possible advantage in the comparison, we will let it be represented by the hydrocarbon C_5H_{12} of the Marsh-Gas series, while anthracite will be taken as the representative of coal. C_5H_{12} will be sixty (60) parts, or 84 per cent. carbon to twelve (12) parts, or 16 per cent. hydrogen, taking 34,000 heat units as the product, in combustion, of one kilogramme of hydrogen and 8,000 units as the product of one kilogramme of carbon (Andrews'), we will have, as the product of one kilogramme of C_5H_{12}, 12,160 heat units. Estimating anthracite as 92 per cent. carbon and 3 per cent. hydrogen (Dana), we have as the product of one kilogramme of anthracite, 8,380 heat units, an advantage in favor of the hydrocarbon oil of, say, 50 per cent.; counting 300 gallons of oil as equal in weight to a ton of coal, oil at 3 cents a gallon would be equivalent, as fuel, to coal at $6 per ton. When we realize the fact that the introduction of petroleum as fuel to any great extent would bring the daily consumption above the largest daily yield yet obtained, we may safely infer that present prices of oil would certainly be doubled. In the generation of steam for ordinary mechanical purposes, where rapidity of combustion and high temperatures are not required, the oil could not be used economically; its use as a fuel would therefore be confined to such branches of industry as require a hot, rapid and clean fire; if the greater ease with which these can be obtained from petroleum will pay for the increased cost as compared with coal, methods for burning it "safely, steadily and economically" will not be wanting. It is not, therefore, lack of mechanical ingenuity, but rather uncertainty as to the probable price of petroleum which keeps it in the background as a fuel, in spite of the astonishing results in its favor which are published from time to time.

F. W. MINSHALL.

THE Angell Oil Company brought suit some time since to recover forty acres of oil territory from M. J. Tufft & Co., for violation of the terms of the lease. The land is located on the New York side of this field near State line. It was leased to the defendants at one-quarter royalty on condition that the necessary number of wells be completed, and that work progress at a certain rate. The defendants lost that portion of the territory not developed.

SHIPMENTS.

Shipment of Crude and Refined reduced to Crude Equivalent out of the Producing Regions in the years named:

YEAR.	January.	February.	March.	April.	May.	June.	July.	August.	September.	October.	November.	December.	Totals.
1859											500	1,200	1,700
1860	900	1,200	2,500	4,640	11,000	21,000	58,500	64,300	79,000	98,400	63,400	38,400	423,240
1861	4,800	49.620	68,410	95,300	184,000	189,000	200,400	210,000	263,000	184.000	76,321	75,282	1,653,333
1862	98,212	93,101	103,762	201,430	256,320	385,211	375,440	376,311	401,210	466,500	213,611	190.463	3,141,521
1863	171,132	104,928	148,388	288,994	456,211	428,282	213,413	281,400	398,211	264.441	281,340	206,211	3,243,651
1864	148,324	101,431	96,486	132,486	125.218	221,386	110.490	101.218	228,430	220,386	201,441	154,705	1,842,061
1865	121,386	94.803	103.201	122,222	140.301	338,403	184,231	115,821	231,402	228,321	215.262	204,779	2,100,132
1866	132 200	121.320	180,206	260.231	280,320	390,260	200,410	290,210	390,431	318 616	210,016	236,701	3,010,621
1867	123,460	115,321	165,230	250.830	300,210	360,311	210.410	260,310	384,206	300,102	280,013	132,807	2,883,210
1868	150,220	144.201	200,410	280 430	310,408	400 046	390 402	320,210	480.306	260,240	280,260	265,377	3,482,536
1869	200,026	160,320	240,210	260,406	340.318	400,601	310.260	250,214	450,200	480,860	280,210	249,896	3,613,621
1870	360,933	312,910	354.400	390,003	407,908	418,516	410,707	516,679	542,217	557,624	519,780	444,254	5,235,931
1871	437,691	347.718	383,890	389,147	587,375	501,754	541,137	528,134	551,075	505,071	480,977	410,822	5,664,791
1872	476,966	407,606	276,220	428,512	510,417	529.228	591,238	621,954	541,607	607,468	477,940	430,786	5.899,947
1873	573,124	527,440	668,374	708.191	768,176	696,414	814.449	864,768	952,955	1,010,852	959,589	955.443	9.499.775
1874	843,663	501,220	518,246	803,409	899,027	815,413	940.281	793,865	1.014,570	543,341	546,117	602,348	8,821,500
1875	435,095	327,776	693,918	729,581	681,679	745.986	904,537	882,089	1,109.392	871,917	671,066	871,902	8,942,938
1876	677,289	519,193	623,762	603,037	646,150	921,862	1,228,530	1,203,402	1,154,549	524,190	871,496	1,190,983	10,191,452
1877	743,461	484,904	913,919	903,526	1,234,324	1,391,124	1 096,951	1,425,943	1,563,797	1,268,971	1,205,634	600,019	12,832,573
1878	775,791	774,234	741,512	846,636	960,894	1,135,119	1,330,454	1,655,651	1,434,225	1,747,390	1,281,410	992,688	13,676,000
1879	663,998	702,729	973,879	1,136,188	1,331,469	1,369,314	1,625,035	1,808,238	1,627.120	1,662,269	1,453,645	1.542,585	15,886,470
1880	1,650,409	1,395,151	1,613,371	842,268	1,095,259	975,083	1,231.611	1,394,129	1,252,635	1,665,933	1,226,030	1,335,613	15,674,492
1881	1,061,617	915,028	1,276,740	1,348,398	1,563,436	1,729,697	1,925,532	2,214,877	2,031,950	2,080,467	2,069,641	2,014,655	20,262,038

CLEVELAND has the following oil refiners known as "independents:" Scofield, Shurmer & Teagle, Clark Brothers & Co., Superior Oil Co., Forest City Oil Co., Cleveland Oil Refining Co., Crystal Oil Co., The Sun Oil Co., Dangler Vapor Stove and Refining Co., J. H. Heisel & Co., The Lake Shore Oil Co., and the Brooks Oil Co. Beside the refineries there are a number of oil brokers and dealers, such as the Murray Oil Co., Globe Oil Co., National Oil Co., Mather Oil Co., L. C. Curran & Co., Dietrichs & Frery, and many others.

IT is a gratifying fact to note that the shipments of petroleum from Philadelphia for 1881 show an increase over any previous year. Our share of the export trade for the past season has been 23 per cent., the total shipments of petroleum footing up 2,220,497 barrels against 7,052,520 barrels shipped from New York and 367,216 barrels shipped from Baltimore. This gain has been made under conditions less favorable to Philadelphia trade than have heretofore existed. The center of crude production has moved northward, and is thus placed more decidedly within the control of the New York trunk lines of railroads.

THE leading German journals continue to look with much suspicion upon the alleged developments in the Oelheim oil district of Hanover. Sensational newspaper reports are evidently used to aid stock operations and there is an urgent call for a full examination by independent experts.

Our run, delivery and stock table is authentic.

STATEMENT made by the United Pipe Lines July 10, 1880, and enlarged to January, 1882. It gives gross stocks, sediment and surplus, net stocks, outstanding balances, receipts (or runs) from all sources, and total deliveries:

	Gross Stocks.	Sediment and Surplus.	Net Stocks.	Outstanding Acceptances.	Credit Balances.	Receipts from all Sources.	Total Deliveries.
1877—April	1,895,153 71	77,386 70	1,817,767 01	449,640 14	1,368,126 87	200,570 81	125,797 90
May	1,762,602 64	75,363 87	1,687,237 77	683,663 71	1,003,571 06	493,200 58	619,612 26
June	1,596,367 68	81,255 42	1,488,112 26	661,786 57	826,325 69	538,906 95	737,609 77
July	1,482,433 51	81,741 50	1,400,692 01	667,166 36	733,625 65	615,145 46	699,476 18
August	1,489,052 53	81,144 63	1,407,907 90	643 281 46	764,626 44	673,403 04	666,144 28
September	1,339,032 27	67,163 68	1,271.868 59	552,676 26	719,192 33	625,225 37	760,745 57
October	1,434,728 78	46,771 99	1,387,956 79	673,850 05	714,106 74	687,094 59	570,092 71
November	1,691,399 52	39,418 00	1,651,981 52	657,591 36	994,390 16	913,644 19	649,242 70
December	2,830.413 36	68,729 63	2,761,685 73	754,338 25	2,007,347 48	1,656,150 37	506,322 99
1878—January	3.124,641 15	72,453 43	3,052,187 72	864,711 41	2,187,476 31	872,681 18	715,149 78
February	3,439,526 98	82.452 66	3,357.074 32	1,404,292 13	1,952,782 19	1,030,688 44	720,478 14
March	3.940,000 65	92,963 06	3,847,037 59	1,487,439 50	2,359,598 09	1,196,251 26	701,681 27
April	4,335,274 84	133,935 76	4.201,340 08	1,615,791 19	2,585,548 89	1,137,359 40	778,050 53
May	4,609,681 45	150,117 76	4,459,563 69	2,065,333 31	2,394,230 38	1,104,352 40	843,081 33
June	4,719,699 25	181,800 03	4,537,899 22	1,950,420 81	2,587,478 41	1,092,604 02	1,004;474 55
July	4,885,851 72	229,080 78	4,656,770 94	2,078,466 56	2,578,301 38	1,258,648 45	1,108,074 33
August	4,571,658 59	217,085 19	4,354,573 40	2.064,590 75	2,289,982 64	1,195,268 67	1,496,009 04
September	4,410,061 84	225,088 86	4,184,972 88	2,705,853 95	2,479,119 03	1,182,118 57	1,318,265 33
October	4,072,267 43	234,050 89	3,838,576 54	1,517,484 27	2,321,092 27	1,271,174 73	1,564,984 43
November	4,083,972 42	216,655 30	3,867,317 12	1,784,443 35	2,082,873 77	1,159,623 71	1,129,047 42
December	4,098,200 92	201,470 30	3,896,730 62	1,741,311 07	2,155,419 55	972,338 83	924,035 93
1879—January	4,759,031 41	182,707 80	4,576,323 61	2,153,763 83	2,422,559 78	1.231,237 19	546,271 74
February	5,157,646 15	171,689 80	4,985,956 35	2,346,238 22	2,639,718 13	1,055,377 95	643,828 71
March	5.503,768 71	190,797 91	5,312,970 80	2,484,861 83	2,828,088 87	1,363,512 17	1,029,029 70
April	5,885,675 24	211,957 06	5,673,718 18	2,644,301 36	3,029,416 82	1,379,349 76	1,015,482 04
May	6,180,843 53	315,992 98	5,864,850 55	2,522,846 36	3,342,364 19	1,488,514 31	2,228 043 27
June	6,426,802 45	334,457 29	6,992,345 16	2,959,921 12	3,132,424 04	1,437,250 90	1,204,557 54
July	6,419,699 08	323,295 32	6,096,403 76	2,323,575 29	2,772,828 47	1,472,651 01	1,465,518 05
August	6,380,606 63	302,345 15	6,078,261 48	3,581,224 03	2,497,037 45	1,714,620 11	1,728,940 81
September	6,589,859 83	325,363 85	6,264,995 98	3,783,480 38	2,481,015 60	1,691,863 41	1,455,811 45
October	6,701,209 87	299,393 67	6,401,816 20	3,788,155 65	2,613,660 55	1,646,725 06	1,502,991 20
November	6,951,133 67	303,641 17	6,647,492 50	3,927,300 18	2,675.192 32	1,600,961 29	1,328,621 19
December	7,362.409 76	294,571 37	7,067,838 39	4.235.459 40	2,832,378 99	1,771,781 24	1,331,822 12
1880—January	7,735,257 38	295,517 60	7,439,739 78	4,436,788 55	3,002,951 25	1,832,963 04	1,145,194 98
February	8,187,012 49	322,568 93	7,864,443 56	4,602,286 49	3,262 157 07	1,607,663 89	1,178,111 92
March	8,621,097 49	351,130 35	8,269,967 14	4,811,894 33	3,458,072 81	1,815,133 31	1,396,037 88
April	9,662,354 59	388,558 16	9,273,796 43	5,846,536 60	3,427,259 83	1,739,297 37	723,794 73
May	10,306,078 79	454,193 73	9,851,885 06	6,361,320 05	3,490,565 01	1,552,240 91	975,061 26
June	11,266,771 77	477,431 60	10,789,340 08	7.397,131 89	3,392,208 19	1,781,937 29	848,339 08
July	12,039,010 00	475,446 56	11,563,563 44	8,125,241 25	3,438,332 19	1,890,161 44	1,095,528 25
August	12,749,623 28	462,987 28	12,286,636 00	8,635,394 80	4,651,241 20	1,904,452 70	1,177,448 42
September	13,618,276 03	382,398. 71	13,236,327 32	9,287,193 94	3,949,133 38	2,075,105 26	1,115,184 71
October	14,020,877 32	391,331 55	13,629,545 84	9,448,615 77	4,180,930 07	1,999.487 98	1,598,285 06
November	14,656,891 55	341,262 67	14,315 628 88	10,038,824 08	4,231,804 80	1,859,991 50	1,064,146 39
December	15,369,758 67	361,184 83	15,008,573 48	10,913,283 49	4,095,290 35	1,987,283 54	1 207,928 35
1881—January	16,291,307 87	360,688 98	15,930,618 89	11,672,583 61	4,258,035 28	1,876 526 50	931,818 71
February	17,355,485 31	391,616 47	16,936,868 84	12,029.594 35	4,934,274 49	1,823,713 46	781,745 93
March	18,488,476 94	432,304 19	18,056,172 75	13,099,262 44	4,956,910 31	2,222,812 39	1,116,695 11
April	19,560,752 23	517,422 38	19,043,329 85	13.846,285 20	5,197,044 65	2,182,636 96	1,183,779 02
May	20,591,177 33	640,662 03	19,950,455 30	14,608,124 70	5,342,330 60	2,278,582 78	1,356,688 23
June	21,397,698 53	756,412 85	20.641,285 68	14,738,828 77	5,902,456 91	2,318,445 18	1,545,448 13
July	21,982,161 42	774,402 94	21,207,758 48	15,150,267 23	6,057,131 25	2,396,472 50	1,756,044 15
August	22,474,105 51	800,343 33	21,673,762 18	15,240,553 15	6,433,209 03	2,527,888 69	2,013,844 67
September	22,727,740 61	820,434 43	21,907,306 18	15,626,283 11	6,281,023 07	2,233,085 37	1,900,251 83
October	23,212.951 99	801,243 43	22,431,708 56	16,408,030 46	6,023,678 10	2,452,428 66	1,803,052 62
November	23,303,782 34	746,980 08	22,556,744 26	16,407,354 48	6,149,389 78	1,995,895 38	1,742,462 86
December	23,862,966 20	‖775,000 00	23,087,966 20			2,255,252 50	1,696,068 64

‖ Estimated.

OUT in Colorado an effort is being made to unearth an oil field. A company has been organized with a capital of $2,000,000. The company claims to control 2,500 acres of oil and coal lands, and proposes making things hot, so to speak, for the natives out there. The surface indications are termed first-class, especially as regards the coal deposits. As to oil, it is a question admitting of serious doubt, as yet, whether there exists a sufficient quantity to repay the cost of development. As the principal objects of the company are the mining of coal and manufacture of gas, it is considered advisable to include the term "oil" in the contract, so that in case a vein is tapped there will be no mistake about the mission of the company. This organization claims also to possess a valuable process for the manufacture of gas, with which it proposes furnishing the principal cities of Colorado.

The oil that has been found in the State so far is a lubricator.

THE HAZELWOOD OIL COMPANY.

IN the year 1873 several wealthy gentlemen residing and doing business in Pittsburg determined to form a company under the mining laws of the State for the purpose of producing oil. This organization was known as the Hazelwood Oil Company. It commenced operations on the Blaney farm, which was purchased at the outset. Three other farms, all of which were very productive, with sundry leases, were speedily added to its possessions. For five years the company continued business in that county, when it was resolved by the management to obtain a standing among the prosperous producing firms of McKean county. In December, 1878, Mr. Bateman Goe, the general manager, came to the northern field and made some purchases for the company, which has been augmented since by purchase and drilling, until it is one of the largest producers in the field at the present time. The company owns 400 acres in fee and has 1,300 acres leased in Butler county, with 24 producing wells. In this field it possesses 1,700 acres in fee simple and 200 acres leased, with 300 wells, which have a daily yield of 1,500 barrels. The officers of the company consist of the following gentlemen:

President—T. J. Craig, Pittsburg.
Secretary and Treasurer—Joel S. Goe, Pittsburg.
General Manager—Bateman Goe, Pittsburg.
Assistant Manager—Harry B. Goe, Bradford.
Directors—T. J. Craig, Henry B. Goe, Wm. J. Lewis, Geo. T. Oliver, Bateman Goe and Wm. Steinmeyer, of Pittsburg; John Newcomer, of Connellsville.
Executive Committee—T. J. Craig, W J. Lewis and Bateman Goe, of Pittsburg.

It has been the settled policy of this company to increase its number of wells by purchase rather than drilling, an example which, if followed, would make the prosperity of the oil region an accomplished fact rather than the Utopian dream it has unfortunately been. From time to time it has procured various tracts with wells, the largest purchase being made in June last year from the Pittsburg Oil Company. Forty-five wells, iron and wooden tankage and other property was transferred. Its latest acquisition was a purchase from Bayne, Fuller & Co. Smith & Thayer and A. J. Thompson, of 36 wells, with a production of 270 barrels a day.

THE table of "Completed Wells," which gives the record of all wells drilled each month from 1870 to January, 1882, was unavoidably crowded out of this issue. Following is the list for 1881: January, 232; February, 218; March, 201; April, 310; May, 412; June, 371; July, 348; August, 335; September, 314; October, 302; November, 347; December, 405; total, 3,795. Dry wells for 1881, 175.

RUNS, DELIVERIES, STOCKS.

TABLES SHOWING THE DECEMBER PIPE LINE RUNS AND SHIPMENTS, WITH STOCKS ON JANUARY 1ST.

Pipe Runs.

District.	Pipe.	Barrels.
Bradford	United	1,976,504.05
Tidioute and Titusville	"	30.323 38
Lower Country	"	224,648.65
Warren	"	23,596.87
Monongahela	"	179 55
Total		2.255,252 50
Bradford	Tidewater	214,896.43
Warren	Union Oil Co	31,084.95
Titusville	Octave Oil Co	4,522.00
Oil City	Charley Run (est)	340.00
Shaffer	Shaffer Run (est)	550 00
Franklin	Franklin Pipe	6,613.14
Total all Lines		2,513,259 02
Average per day December		81,083.55
Average per day November		75,905.33

Deliveries.

District.	Pipe.	Barrels.
All Points	United	1,696,068.64
Warren	Union Oil Co	17,909.14
Titusville	Octave	4,970.00
Franklin	Franklin Pipe	8,334 38
Shaffer	Shaffer Run (est)	550 00
Oil City	Charley Run (est)	340.00
Bradford	Tidewater	241,482.12
Total deliveries December		1,969,654.28
Total Runs December		2,513,259.02
Amount of Runs in excess of Shipment		553,604.79

Stocks January 1st.

District.	Pipe.	Barrels.
Oil City	Charley Run	3,000.00
Bradford	Tidewater	2,131,030.37
All Districts	United	23,087,966.20
Shaffer	Shaffer Run	25,100 00
Warren	Union Oil Co	65,694.09
Titusville	Octave Oil Co	8,000.00
Franklin	Franklin Pipe	6,613.14
Total December		25,327,403.80
Total November		24,947,987.13
Increase December		377,416.67
Average increase per day December		12,174 73
Average increase per day November		8,353.26

EXPLANATIONS TO DIAGRAM.

THE two upper pools in the Bradford belt indicate gas deposits and the lower one salt water.

S. in McKean county, means Sugar Run.

The outlines of the pools are generally larger than the scale of diagram warrants.

The lengthy pool running south from Titusville represents the old Oil Creek development, with Shamburg, Pithole and Cashup on the east. The Oil Creek pool should stand nearly perpendicular.

The west line of Forest county should be placed three-fourths of an inch eastward.

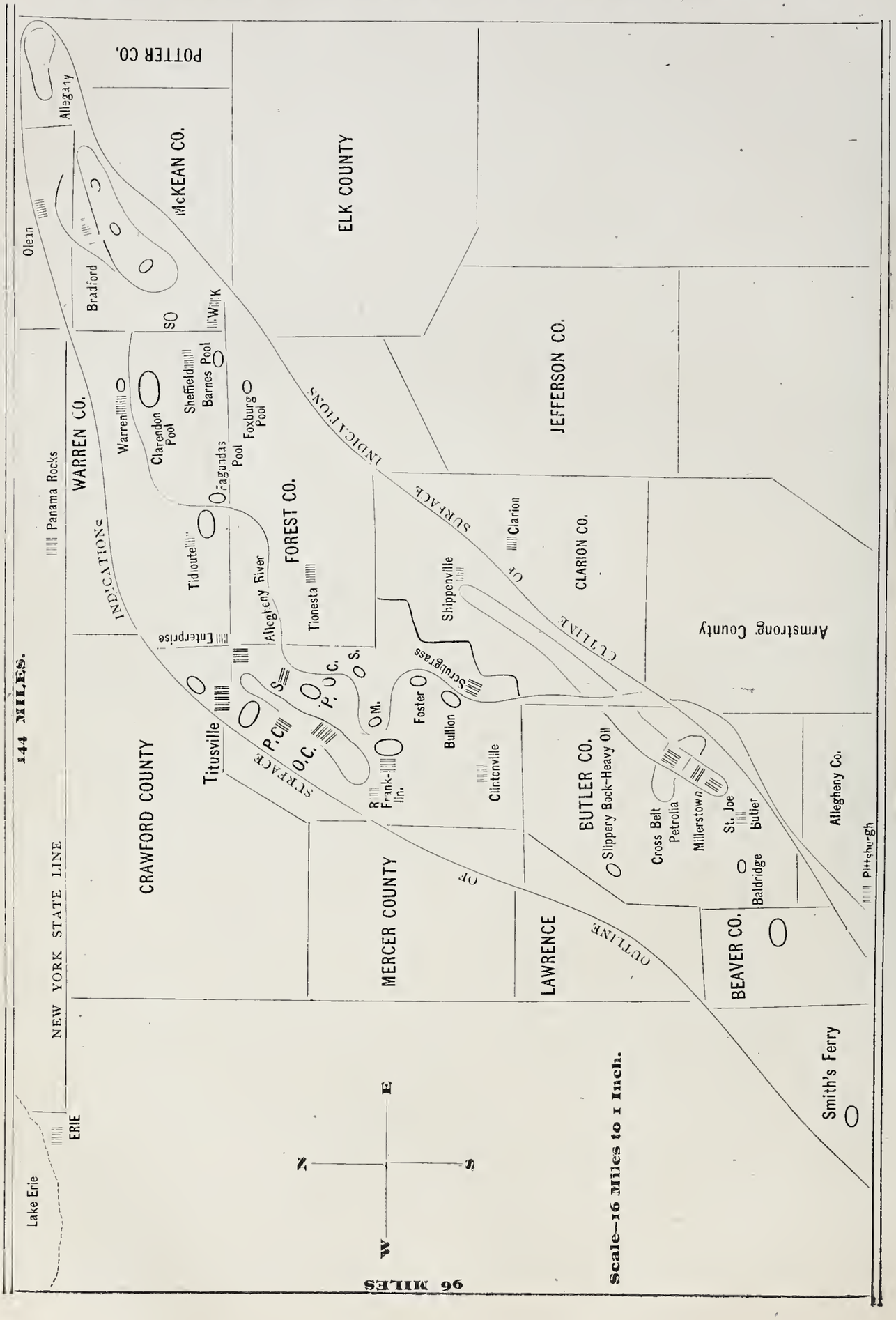
The Tidioute pool should be longer and narrower.

The Foxburg pool, in Forest county, should be placed nearer to the Warren county line.

The upper end of the Bradford pool should extend a short distance into New York State.

The Allegany river should make a bend westward at Warren county instead of eastward.

DIAGRAM OF THE PENNSYLVANIA OIL FIELD.



CORRECTIONS:—

On Page 109 in shipments for 1882, left hand 3 should be 8.

Page 114, Production 1882, January Column, 75,028.

Page 114, Total 23 years to December 31, 1881 should be 186,532,067.

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The New-York, Lake ERIE & Western Railroad.

BUFFALO & SOUTH-WESTERN DIVISION.

LOCAL TIME TABLE.

	(10)	Daily (4)	Daily (2)	STATIONS.	Mls	Daily (1)	Daily (3)	(11)
.. ...	P. M.	P. M.	A. M.			A. M.	P. M.	A. M.
.....	.....	6.50	10.20	Ar...BUFFALO..Lv.	0	8.10	4.45	.....
.....	4.17	.....	9.58	Lv.Limest'ne R'ge "	4	.....	5.06	8.43
.....	3.57	.....	9.47	" ...Big Tree... "	8	.....	5.16	8.48
.....	3.50	.....	9.44	" Abbott's Road "	10	.....	5.20	8.55
.....	3.33	6.14	9.35	" .. Hamburgh.. "	12	8.48	5.28	9.35
.....	3.30	.....	9.33	" .Water Valley. "	13	.....	5.30	9.40
.....	3.15	.....	9.26	" . Eden Valley. "	16	.....	5.36	9.53
.....	3.03	6.02	9.20	" . Eden Center . "	18	9.00	5.43	10.05
.....	2.40	5.53	9.09	" .North Collins. "	22	9.09	5.53	10.30
.....	2.18	.....	8.57	" ....Lawtons... "	26	.....	6.04	10.53
.....	2.00	5.37	8.49	" .... Collins. .. "	29	9.24	6.12	11.10
.... .	1.45	5.30	8.40	" ...Gowanda .. "	32	9.30	6.20	12.00
.....	12.45	5.15	8.25	Lv.....Dayton... Ar.	37	9.45	6.35	12.30
.....	12.30	5.10	8.23	Ar.....Dayton ...Lv.	37	9.55	7.03	1.00
.....	12.15	5.02	8.19	Lv....Markhams.. "	39	10.00	7.08	1.12
.....	11.45	4.53	8.11	" ..Pine Valley.. "	42	10.08	7.17	1.32
.....	11.05	4.40	8.00	" .Cherry Creek. "	47	10.20	7.29	2.02
.....	10.30	4.29	7.51	" ..Conewango.. "	51	10.30	7.39	2.20
.....	9.38	4.08	7.34	" ....Kennedy... "	59	10.48	7.58	3.16
.....	9.00	3.53	7.22	" D.A.V.&P.Cr'g "	65	11.02	8.13	3.53
. ..	8.30	3.45	7.15	Lv.JAMESTO'N..Ar.	68	11.10	8.20	4.15
.....	A. M.	P. M.	A. M.			A. M.	P. M.	P. M.

Trains No. 1 and 4 stop at all stations on Sunday.

THROUGH CONNECTIONS FOR THE WEST.

(4)	(2)	STATIONS.	(1)	(3)
.....	2.50 P. M.	Ar.....BOSTON.....Lv	.....	3.00 P. M.
11.25 A. M.	7.25 A. M.	" .....New-York ..... "	5.45 P. M.	6.45 "
3.47 "	11.00 P.M.	" .... Binghamton..... "	1.21 A. M.	3.35 A. M.
2.03 "	8.55 "	" .....Elmira ..... "	3.07 "	5.35 "
9.25 P. M.	1.03 "	" .... Niagara Falls .... "	4.35 "	2.15 P. M.
6.50 P. M.	10.20 A. M.	Ar.. ..BUFFALO Lv	8.10 A. M.	4.45 P. M.
3.45 P. M.	7.15 A. M.	Lv...JAMESTOWN....Ar	11.10 A. M.	8.20 P. M.
1.03 "	5.20 "	" .....Corry ..... "	12.55 P. M.	8.55 "
11.40 A. M.	3.55 "	" ..... Meadville ..... "	2.20 "	10.40 "
10.25 "	2.40 "	" .....Greenville..... "	3.36 "	3.44 A. M.
9.10 "	1.08 "	" ..... Warren ..... "	4.44 "	4.54 "
7.10 "	10.45 P. M.	" ..... Cleveland..... "	7.00 "	6.50 "
8.17 "	12.08 A. M.	" .....Ravenna..... "	5.42 "	5.47 "
8.05 "	11.55 P. M.	" .....Kent..... "	5 55 "	6.00 "
7.24 "	11.20 "	" .....Akron..... "	6.38 "	6.30 "
4.44 "	8.25 "	" ..... Mansfield ..... "	9.10 "	9.30 "
4.05 "	7.40 "	" .....Galion..... "	10.00 "	10.10 "
3.13 "	6.48 "	" .....Marion..... "	11.02 "	11.02 "
1.18 "	4.50 "	" .....Urbana..... "	1.18 "	1.00 P. M.
12.46 "	4.04 "	" .....Springfield..... "	2.15 "	1.50 "
11.50 P. M.	3.10 "	" .....Dayton..... "	3.30 "	2.50 "
9.20 "	12.40 "	" .....Cincinnati..... "	6.00 "	5.30 "
.....	8.30 A. M.	"ChicagoP.Ft.W.&C.Ry "	.....	8.20 "
7.50 A. M.	6.50 P. M.	" .....St. Louis..... "	7.10 P. M.	7.05 A. M.
6.25 P. M.	6.47 A. M.	" ....Kansas City..... "	8.45 A. M.	8.30 P. M.
5.10 P. M.	7.30 A. M.	Lv..... OMAHA .....Ar.	10.00 A. M.	7.35 P. M.

Train No. 1 arrives at Titusville 1.30 P. M., Oil City 3.40 P. M.

BRADFORD BRANCH.

12)	(22)	(6)	D'ly. (20)	STATIONS.	Mls	(15)	(23)	(9)	D'ly (21)
P.M.	P.M.	A.M.	A.M.	Ar.] [Lv.		A. M.	A. M.	P.M.	P.M.
3.20	4.01	8.30	6.55	" .CARROLLTON. "	0	9.20	11.04	4.10	8.22
2 59	3.44	8.06	6.39	" ....Limestone.. "	6	9.43	11.20	4.35	8.42
2.52	.....	7.58	6.31	" ... .Babcock .... "	8	9.50	.....	4.41	8.50
2.45	3.34	7.50	6.26	" .....Kendall..... "	10	9.58	11.31	4.48	8.57
2.40	3.30	7.45	6.20	Lv...BRADFORD..Ar.	11	10.03	11.35	4.51	9.00
1.45	.....	7.35	.....	Ar...BRADFORD..Lv.	11	10.45	1.20	4.55	....
1.35	.....	7.25	.....	" ....DeGolia's....Ar.	14	11.05	1.30	5.03	....
1.30	.....	7.18	.....	" ...Custer City... "	15½	11.10	1.35	5.07	....
P.M.	.....	6.30	.....	Lv. .BUTTSVILLE. "	26½	12.25	2.05	5.45	....
.....	.....	.....	.....	.....	....	.....	.....	.....	.....

EXTRA TRAIN leaves Buttsville at 8.40 A. M., Bradford 10.03 A. M., arriving at Carrollton 10.45 A. M., *Daily.*

EXTRA TRAIN leaves Buttsville at 1.10 P. M., Bradford 2.15 P. M., arriving at Carrollton at 4.55 P. M.

EXTRA TRAIN leaves Carrollton 11.50 A. M., arriving at Bradford 12.35 P. M., Custer City 1.20 P. M.

SUNDAY SPECIAL TRAINS leave Carrollton at 12.15 and 5.05 P. M., arriving at Bradford at 1.00 and 5.54 P. M.

Train No. 12 runs daily between Bradford and Carrollton.

TRAINS BETWEEN BUFFALO AND BRADFORD.

	(4)	Daily (2)	Mls	STATIONS.	Mls	Daily (1)	Daily (3)	
	P. M.	A. M.				A. M.	P. M.	
... ..	6.50	10.20	78	Ar... BUFFALO....Lv.	0	8.10	4.45	.....
.....	6.14	9.35	66	Lv.....Hamburgh .... "	12	8.48	5.28	.....
.....	5.37	8.49	49	" .....Collins..... "	29	9.24	6.12	.....
.....	5.30	8.40	46	" .....Gowanda ..... "	32	9.30	6.20	.....
.....	5.15	8.25	41	" ..... Dayton ..... "	37	9.45	6.35	.....
.....	5.09	8.08	41	Ar.....Dayton..... Lv.	37	9.55	7.03	.....
.....	4.35	7.30	25	Lv....Little Valley...Ar.	53	10.31	7.46	.....
.....	4.15	7.10	17	" .....Salamanca ... "	61	10.55	8.07	.....
....	4.03	6.57	11	" ....Carrollton..... "	67	11.04	8.22	.....
.....	3.44	6.39	5	" .....Limestone..... "	73	11.20	8.42	.....
.....	.....	6.31	3	" .....Babcock..... "	75	.....	8.50	.....
.....	3.34	6.26	1	" ..... Kendall..... "	77	11.31	8.57	.....
.....	3.30	6.20	0	Lv....BRADFORD...Ar.	78	11.35	9.00	.....
	P. M.	A. M.				A. M.	P. M.	

Train No. 1 arrives at Bradford *on Sunday* at 1.00 P. M.

REMEMBER, THAT BETWEEN BUFFALO AND BRADFORD THERE IS NO CHANCE OF CARS!

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AND ALL POINTS SOUTH.

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Train leaves Buffalo at 2.00 p. m., arrive at Olean at 4.38 p. m., Emporium 6.40 p. m., connecting at Olean for Bradford and at Emporium with P. & E. R. R. for Harrisburg, Philadelphia, Baltimore and the South.

Trains for Buffalo arrive at Eldred at 9.30 a. m., Olean 10.04 a. m., arriving at Buffalo at 12.35 p. m.

Afternoon train leaves Eldred at 3.10 p. m. and arrives in Buffalo at 6.40 p. m.

GEO. S. GATCHELL, Gen'l Superintendent. WM. S. BALDWIN, Gen'l Pass. Ag't.

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THE PETROLEUM AGE.

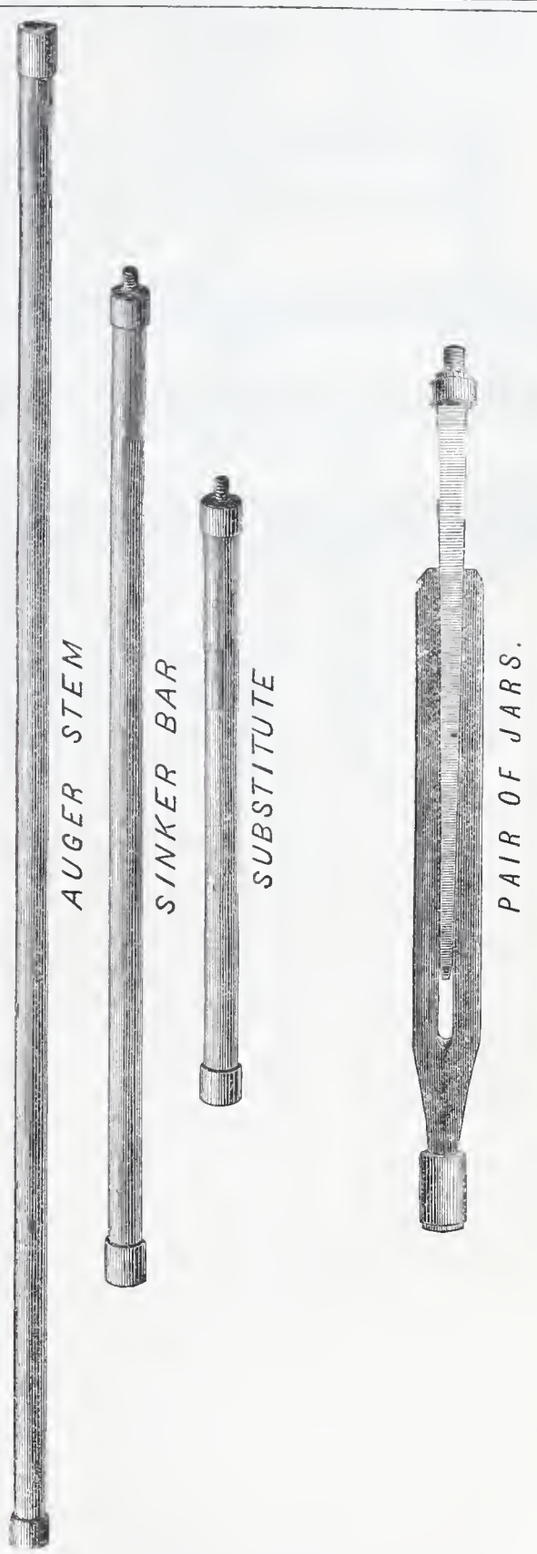
VOL. I. BRADFORD, PA., FEBRUARY, 1882. NO. 3.

DRILLING TOOLS.

BUT few, outside of those actively engaged in petroleum operations, are familiar with the tools used at the present time in drilling oil wells. And when compared with the implements made use of in the beginning the contrast becomes exceedingly striking. In order, therefore, to simplify and make plain to an inquiring public the character of the ponderous concerns which are now urged downwards through the solid rock, we have procured plates and illustrate them in this issue. In the early days if a man should have asserted his belief in the propriety of using a bar of iron 4½ inches in diameter, and from 30 to 40 feet in length, as an augur stem, he would have been considered as seriously demented as Col. Drake was, while drilling the first well down through hard shells of slate and sandstone. But, as in all other branches of the industry, there has been vast improvements in the art of manufacturing drilling tools, and, in fact, in that of every implement used in and around an oil well. The cuts in the next column illustrate the three principal bars which constitute a set of tools of the present day.

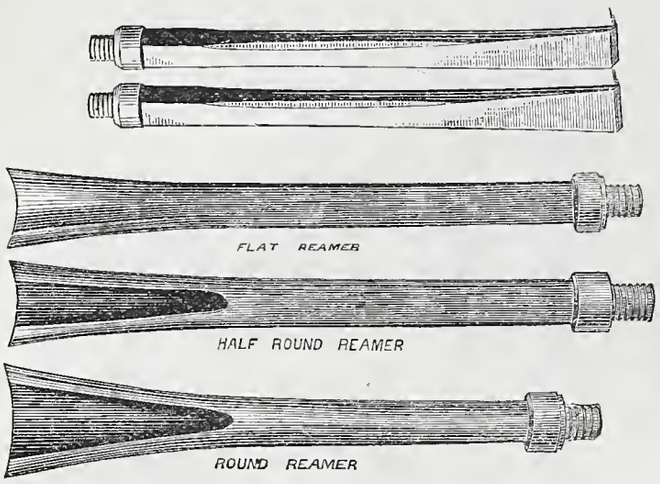
The longest piece of the three, or No. 1, is termed the augur stem, and is from 28 to 40 feet in length, of 4½ inch thoroughly refined iron. In some cases 4¾ iron has been used, but the ruling size is as first stated. This stem has a box on one end and a pin on the other. Into the box, which is always at the lower end, as the tools hang in the derrick, the drilling bit is screwed. These put together, the next in order is a pair of jars which the cut in next column nicely illustrates.

The jars are made of the best Norway iron, laid with English steel, and are made so as to work freely in a hole 5⅝ inches in diameter. The jars for many years were screwed on to the augur stem, but latterly, in order to avoid the danger of unjointing in the hole, are now, as a rule, welded on to the stem, so that the augur stem and jars form one piece from 35 to 45 feet in length. The next piece is the sinker bar, which is screwed to the jars in order to give additional weight to the tools, as well as to act as a powerful agent in running the tools when they are liable to stick in the tough substances sometimes formed in wells. This additional



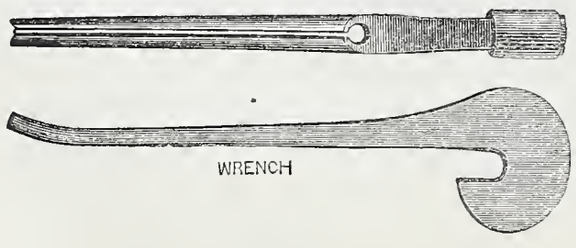
weight makes the effects of the sudden jar much greater, the jar being caused by the upward stroke of the walking beam. The sinker bar is from 14 to 16 feet in length. The shortest piece of the three in the first illustration is termed the substitute. It is usually about 3½ feet in length, and, having a box and

pin, can be attached to the tools at any time. It is generally used either as additional weight to the sinker bar or, in place of the latter, for drilling at the top of the hole, and sometimes in fishing for lost tools. The following gives an idea of the ordinary tools commonly termed the bit and reamer:



These represent bits and reamers as formerly used. At the present time, however, the office of the reamer is dispensed with, and the "club" bit is used instead. This bit is so called because of its extra thickness at the end which penetrates the rock. From the sharp edge the tool is beveled backwards about one inch and is an inch or more in thickness where the bevel ceases. This has the effect of cutting the hole clean as it proceeds downward, thus saving the trouble of running the reamer after the bit as formerly. The half round and round reamers are sometimes used to remove any lumps or obstructions that are occasionally left on one side of the hole; at other times, a hard spot may be touched at one side of the rock, which causes the bit to incline to the opposite side a little too far, thus causing what is termed a "crooked hole." This fact generally becomes known about the time the length of the augur stem has been drilled, when the jars begin to stick a little at the point indicated. The round reamer is used to remove this obstruction and "straighten the hole." The reamer is made nearly the full size of the hole and, with the exceptions of a small space at two sides, is perfectly round.

The following illustrates a rope socket, temper screw and the ordinary tool wrench:



The rope socket, as indicated, is made with two rings, between which the drilling cable is run and riveted. These rings are 2½ feet in length. The socket is then attached or screwed on to the sinker bar and the set of tools is complete.

The temper screw is attached to a hook on the end of the walking beam, which is placed so that the screw hangs directly over the well. Where the bar is seen at the bottom there are clamps, which just fit the rope, and a set screw which fastens the clamps, so that they cannot slip, and as the tools cut down through the rock the screw is let out gradually until the full length (five feet) has been run, when a halt is made, the tools drawn from the well and the bailer run to remove the drillings. The wrench is made several feet in length and of sufficient size to fit on to the square shoulder of the tools at all joints. An iron lever is used against the end of the wrench, with the full strength of two men to force the joints up tightly, and the same is required in unjointing.

The cuts on opposite page are illustrations of numerous implements now used in fishing for lost tools, an event which frequently occurs throughout the Oil Country.

The horn socket is a round iron concern, open and bell-shaped on the inside, something like a cow's horn, and is used for straightening up any tool that may be lost in the hole. It sometimes brings out in its mouth small pieces, such as a bit or a portion of a bit, that may have been broken off in the work. A cable sometimes breaks in the hole and then grabs are used to draw it out in pieces.

The slip socket is represented with two bearded prongs, one apparently outside of the socket itself and the other inside. The fact is, both belong inside of the hollow box at the end. This box is formed so that when the instrument is run down into the well on to the end of the stuck tool, the slip with the beards passes over the collar, and becomes secure on the end of each piece. Then, when drawn up, the beards are tightened to the tool to hold it till it is drawn out.

The winged substitute is used between the augur stem and any fishing tool to guide it in the hole.

The star reamer is used as the round reamer for straightening a crooked hole. For this purpose drillers have recently adopted a simpler and, they say, more satisfactory plan. This is by winding the augur stem with rope until it nearly fills the hole and, by this operation, it is not permitted to go past a lump on the wall of the well until the bit has made the proper room.

The slip spear is an instrument that is frequently used to draw out tubing or casing. The instrument is run down through the pipe and the shoulder, which is fastened to the spear, after passing below the point, springs out under and sliding to its shoulder seat serves as a support to the pipe and lifts it out of the hole.

The other pieces are easily understood by the ordinary reader.

The rope knife is made in the form of a hollow box with a sharp piece of steel placed on a hinge, so that the box can be run down over the rope, or, in other words, so that the rope will pass through it. When the instrument reaches the end of the rope, at the tools below, it is immediately started upwards, when the sharp steel, as related, drops against the rope and prevents the upward movement until the rope is completely severed. This is frequently done so as to remove all obstructions from above a set of tools that may be stuck at the bottom. As soon as the rope is drawn out another set of tools, with a fishing instrument, is run down after them.

The cable is from an inch and three-quarters in diameter to two inches, and those used are principally from the manufactories of a New Bedford, Mass., company, and Philadelphia, Pa. They are made in all lengths, from 1,000 to 2,400 feet.

PETROLEUM.

CHAPTER III.

THE striking of the "Fountain Well" was the cause of a perfect commotion among oil men generally. Here was something entirely new in the world. Though the business was yet less than two years old, the wonder of its discovery had passed away, and the drilling of wells and the pumping of the same had assumed the attitude of an industry which was gradually increasing in magnitude. But, beyond the wild stories that floated on the atmosphere, and were conducted from mouth to mouth, regarding the immense fortunes acquired by Smith, Jones, or Brown, there was nothing to vary the monotony of the every-day struggle for "greasian" wealth. The country was rapidly filling up with adventurers, who were pouring in from all parts of the United States and the Canadas. Hundreds came to the oil region to gather up the greenbacks, which were said to be blowing about by every puff of wind that visited us from any point of the compass. Others came expecting to earn their biscuit and butter by hard knocks and heavy blows. The latter class, it may be added safely, were never disappointed. In nearly all cases success crowned the efforts of the industrious laborer. Hundreds of them acquired substantial fortunes and retired to enjoy them; while hundreds who came to the region with pockets well-lined with greenbacks, departed, in the course of time, with a gripsack and top coat as the abundance of their acquirements while "doing" the Oil Country. These, as a rule, shook the miserable dust of the region forever from their skirts and swore vengeance against any speculation that smacked of oil. By this means the reputation of the Oil Country suffered considerably. Because a certain portion failed to accomplish the ends desired in making investment, it was no reason why capital could not be used to advantage if used judiciously. Even in these early days of the business this was very frequently done. The boarding-house keepers, who had found it difficult to make a successful monthly run against the tally of the cruel slayer of the delicate bovine in other parts of the world, here found themselves suddenly advancing on the highway of fortune — and to be a landlord was simply to be a ruler among the people. He was a personage of note, who aspired to a dignity equal to that of an Astor House usher. The laborer of yesterday frequently became the lionized capitalist of to-day.

And so the record might continue at great length. The valley of Oil Creek, all the way from Titusville to Petroleum Centre, or, more properly speaking, the McClintock Farm — upon which the town was afterwards built — was a very interesting place to dwell in in those days. When the hundreds and, it might safely be said, the thousands, of sight-seers viewed the "Fountain" gushing forth its contents in such prodigious quantities, the expressions of astonishment and wonderment were very numerous and, in some instances, extremely ludicrous. "A girl of the period," who had always resided within a gunshot distance of the well, on approaching it early in the morning after its original outburst, was heard to remark that it was going to drown the world, and broke out in a flood of tears. The majority, however, who witnessed it gave it at most three days to blow its head off. It continued, nevertheless, for upwards of a year, and stopped as suddenly as it commenced. But before this occurred its greatness was thrown into the shades by the striking of the Empire Well on the same farm, which introduced itself with a yield of 2,000 barrels a day. This well was completed in September, 1861, and in November of the same year, the Phillipps Well, on the Tarr Farm, a few miles farther down the creek, reached the proper level and started at 3,000 barrels. Neither of these was so much of a surprise, however, as the original spouter, as oil men had begun to build hopes of finding others of equal calibre, and, as will be seen farther along, they were not disappointed, in some instances at least. The "Empire" was a most valuable acquirement to the owners, notwithstanding the price of oil had descended to the unprofitable figure of fifteen cents a barrel, or a package of forty-three gallons. While this well was rolling out 700 barrels a day, the manager, for, and with the consent of the owners, sold one month's future product for the sum of $500. It is said its yield during the period named, amounted to upwards of 60,000 barrels for which the owners realized less than one cent a barrel. Bradley & Son, of Cleveland, were the purchasers, and while they lost some of the product yet realized a handsome profit from the investment. This seems like a peculiar occurrence, but it must be remembered this was a year of an enormous over-production and for a time near its close it began to be feared that the oil business was a failure; that the whole earth was simply a store-house for immeasurable and inexhaustible stores of the liquid. Thousands of barrels of it floated down Oil Creek and passed away on the bosom of the Alleghany River, and was lost to

the world. Open barges were sometimes used to catch the wasting fluid, and thousands of barrels of it were dipped and conducted to market, at Pittsburg, or stored for future use, at no further cost to the "speculator" than the mere labor of gathering it in. Like its forerunner, the Fountain, it ceased flowing in the spring following its advent; but, unlike the Fountain, after being properly cleaned out it continued to produce at the rate of from 300 to 400 barrels per day for some time. The Fountain Well, was never resurrected after its first refusal to yield, and the general opinion was that it had been choked off by paraffine. The tubing through which the oil passed was so completely packed by the stuff that it was impossible to drive even a pointed iron through it. Around these wells it is, perhaps, needless to add derricks became so numerous, and so closely located, that a lengthy stepper could pass in a circle without touching the earth. It was a time of mental feasting for those who enjoyed excitement and, what seems remarkable, was the fact that, notwithstanding the low price of oil during the greater part of 1861 and a portion of 1862, operations were conducted on a lively scale.

While Oil Creek was thus the scene of immense activity, there were other places throughout the country that were also stirred considerably, and were actively engaged in the search for oil. During the spring of 1860, a number of wells were started in the vicinity of Tidioute. In all but one instance these were "kicked" down with spring pole. A few got a showing of oil, and from one well, which was located on the east side of the river, at that place, eight barrels of oil were pumped daily for many months. This was located in close proximity to the Economite tract, a history of which appears elsewhere in this issue. This caused the Economite Company to proceed at once to develop its large tract. During the summer and fall of the same year three wells were drilled by this organization on the east side of the river. The first two were totally dry and the third, though it had a showing of oil, was finally abandoned as a worthless venture. By following up the business, however, the company finally succeeded in developing a field which has proven as rich as almost any other known to oil-region history. In the spring of 1861, eight wells were drilled by the organization referred to; four of which were fair producers and four were nearly, if not quite, worthless. On the river bottom lands the drilling was only about 100 feet in depth, and on the hill sides it varied, according to elevation, from 125 to 200 feet. Notwithstanding this, the cost of sinking the average well in those days equalled and, in many instances, excelled that of the wells of the present day.

After success had finally crowned the efforts thus far put forth by the Economite Company, it began to make great preparations for extensive operations; wharves for loading oil into flat-boats and suitable buildings for the convenience of help, and storage of goods, etc., were erected. Tidioute by these means gained new life. It received an impetus which elevated it to the rank of an oil town, which it ever after maintained.

The history of the progress of developments in this section will be given at the proper time in a future issue.

During the years 1860 and 1861, several hundred wells were drilled along Oil Creek, from the mouth to Titusville; but, it is safe to say, not more than one-half of them ever paid the owners anything in return for the outlay incurred. The remainder, with few exceptions, which will be noted further on, were small pumpers. On the Hyde & Egbert Farm, a short distance down the creek, from the Empire and Fountain Wells, some drillers had taken a lease at one-half royalty from the original land-owner. When the well reached the proper level it flowed furiously. This was during the early summer months of 1861. The lessees having agreed to furnish the land-owner his share of the oil in barrels furnished by the former, the well was abandoned without ever being tubed or tested: the reason being that oil was so cheap, from twenty to twenty-five cents a barrel, the lessees could not afford to live up to their contract. The well, therefore, was permitted to lie idle until it was considered worthless, and was never properly treated. This is the only instance on record where a flowing well run the owners into debt. Other instances of a peculiar character regarding early developments are numerous, but cannot all be noted in this volume. To Mr. J. W. Sherman, a Bradford operator, we are indebted for some points of value regarding the progress of developments on "the Creek." Mr. Sherman commenced the business of drilling wells as early as 1860, on Parker's flat, below Titusville. Here he got a dry hole and drifted to Pioneer and located on the opposite side of the creek from the noble well which was not yet completed. Mr. Sherman at this time found his means tolerably well exhausted. After drilling a certain depth he found it necessary to procure a horse-power or an engine. An interest was

finally traded for an old horse and the work proceeded. Afterwards another interest, one-sixteenth, was sold for an engine, and from that date until fuel became short the work progressed with some degree of satisfaction. It is related, though not by Mr. Sherman, that the entire company were unable to purchase or procure on "tick" a single ton of coal. At last another interest was sold for $85 and a "shooting iron," and by this assistance the well was pushed through until a crevice was punctured, resulting in the well gushing 1,200 barrels a day. The first sale of oil from this well was a 10,000-barrel lot at 12½ cents a barrel. This was in July or August of 1861, and in November of the same year oil brought $5.00 a barrel. The oil from all points, when the creek was low, was hauled to Titusville, Garland and Union, and it is said some was hauled all the way to Erie by team. There were no railroads into the region as yet, and the price paid for hauling from Pioneer and other points on the creek to Titusville was $4.50 a barrel. It was not an unusual thing to load 500 teams in one day at any one well. For this reason teamsters acquired comfortable fortunes in a few years, and even at the date of this magazine there are operators who look back to those days with considerable interest, and view their efforts with team and wagon as the direct source whence came their success in life. It must therefore be a great pleasure for a man who has overcome all the vicissitudes of the oil business, and has grown in wealth gradually until from the load of barrels he has marched up to the private office of the banker. There are not a few of this class to be found in the region to-day, whose names could be given. There are, however, quite as many who have fallen by the way and have passed from the office of the banker and the merchant to the position of team-driver. So variegated has been the surface of this great industry, that there are few conditions of life that are not or have not been experienced by some of those engaged. "The diary of an oil man" gives some idea of it, and there is more truth in it than fiction.

We are now, moreover, on the verge of the era of large flowing wells on Oil Creek. The Espy Well, on the Foster Farm, completed in the fall of 1861, yielded 800 barrels a day; the Phillipps, on the Tarr Farm, furnished about the same time 3,000 per day; Fred. Crocker, of Titusville, near the Fountain, finished early in 1862, flowed 1,000 a day for some time; Densmore & Co., near Funkville, finished early in 1862, 500 a day; Vansleick, on the Widow McClintock Farm, near Rousville, the home of the famous Johnny Steele, spring of 1862, 1,500 a day; the "burning well," Blood Farm, about the same time, 1,500 a day; Densmore, Tarr Farm, 300; and many others of minor importance were introduced in a comparatively short period of time and served, as stated, to so increase the supply as to cause prices to fall far below the paying point. An instance in Mr. Crocker's career may be noted without danger of injury to the record. A large amount of the oil of the country was going to waste for want of shipping facilities and market. Mr. Crocker conceived the idea of shutting the flow of oil into his well by the use of a stop-cock. He had concluded that the oil could be preserved in the rock and be removed at pleasure, by simply opening the stop-cock and letting the well flow a double portion. Imagine his chagrin when on opening the channel the first morning after its closing to find that the well refused to respond and never thereafter flowed a barrel. It pumped, however, about thirty barrels a day for a year or so.

The wells were drilled in such close proximity — a half-acre lot being about all the territory demanded by a lessee upon which to sink a well — that not infrequently one well drew on the resources of its neighbor, and *vice versa*. The Phillipps and Woodford Wells, on the Tarr Farm, will serve as an instance. When one of these got "the bulge," so to speak, on the other, it would flow 1,500 or 2,000 barrels a day, while the other would pant and snort like a balky horse and would yield nothing. The only way, therefore, by which either could get ahead of the other was by pulling the tubing and permitting the fresh water to rush into the hole. This would drown the neighbor, and by rushing in the tubing, and exhausting the water quickly, the latter would obtain the start, and hold it until the other did likewise. A compromise was finally effected, by which one well was made to perform the duties of the two.

The large wells had so increased during the spring and summer of 1862, that the daily yield, in August and September, arose to 13,000 barrels a day, and the entire product for the year amounted to a little over three million barrels. In September, the price had reached $1.25, and it skipped around, closing at the end of the year at $2.25 a barrel, though at times as high as $4.00 was paid at the wells. Operators along the creek, who had witnessed the pulsations of the numerous spouters during the spring and

summer of 1862, had about concluded that there was no limit to the enormous supply, and no hopes of prices ever again advancing. They were willing to contract their future production at any price. But they were mistaken as usual, and some of them got caught in serious traps by such reasoning; just as at the present day, 1882, only twenty years later, J. B. Weir, of New-York, had reason to be thankful for the turn things at that time took in the minds of producers. This gentleman came out to the creek with a view to purchasing for future delivery all of this cheap oil that he could secure. His desire was to bargain with good substantial companies, and none other. For this reason he called on the Columbia Oil Co., which had been producing for a few months, and had some fine wells. Mr. Weir closed a contract with the Company for a large amount of oil at the price ruling at the time — 15 or 20 cents a barrel. It was not long, however, until prices began to move upward, and $1.00 a barrel was freely paid. The Company, perceiving there were possibilities of prices returning to their original schedule, $10.00 or $15.00 a barrel, proposed a compromise with Weir. This was agreed to, by the latter receiving one-eleventh of the stock of the company. Mr. Weir, in 1864, related in the presence of our candid informant that his monthly income from this source was $10,000.00, and that his stock was worth $600.00 a share.

During this same year, Graff & Hasson, who are still engaged in the business, obtained large wells on the Hyde & Egbert Farm, at Petroleum Centre, which afterwards produced the great Maple Shade and Coquette Wells, which yielded 1,500 barrels each per day. During the season of 1862, Mr. C. L. Wheeler, now superintendent for the Union Oil Co., at Bradford, was one of the chief buyers of crude on the creek, representing the firm of Cousins & Co., of New-York. The headquarters of the concern in the oil regions was Titusville, whither nearly all the oil that moved out of the region northward was deposited for reshipment. The Corry & Titusville R. R. was started during this season, and this brings us up to 1863, with a few important chapters to follow.

THE CANADIAN OIL FIELD.

AS early as 1857, oil was produced in the Canadian Field. It was first discovered in the County of Lamberton, Township of Enniskillen, by a man named Shaw, who had removed to that county, from Massachusetts, in 1836 or 1838. This man was a peculiarity in his way, and was considered a kind of worthless, shiftless creature. He had gained the reputation of being a visionary schemer, and his numerous endeavors to induce neighbors to join him in his "wild cat" enterprises only brought down npon his head the epithet "he's crazy." In 1856, he became considerably excited over a new scheme, in which he again tried to interest his countrymen. This was nothing more nor less than to drill down through the rocks with a view to extracting from the bowels of the earth a substance which he declared existed there in large quantities. This was the blow that shattered the *vertebra* of the Campbell. It settled the question in the minds of his Canadian neighbors that he was a lunatic, and the question of having the man removed to an asylum was openly discussed. Perceiving the effect the matter had upon the people, Shaw ceased to urge it further, and business went on as before. Now it will be remembered that throughout Enniskillen the settlers had observed, from the earliest records, a dark oily substance floating upon the small streams, and occupying the surface of the pools of water in swamps, etc. The water obtained in wells dug for domestic purposes tasted brackish, and though nobody seemed capable of prescribing a remedy, or explaining the cause, yet every one in that region was familiar with the peculiarities of the water of Enniskillen wells. This had the effect of retarding emigration to that particular region, as it was looked upon as "a tough place to live in." In some localities there were what were termed "gum beds," which covered a considerable area. These consisted of a gummy, odoriferous, tar-colored mud, resembling putty in consistency, and, strange as it may appear, never suggested to the minds of the innocent tiller of the soil that there was value in it. It was left, however, for "crazy" Shaw to open the mine of wealth that lay hidden beneath the surface of the earth throughout Enniskillen. In 1857, finding that assistance could not be obtained from any source, Mr. Shaw undertook the work of digging a hole in the ground a short distance from his dwelling. After a week's struggle he was aroused one day, while taking his mid-day refreshment, by the sound of an explosion, which seemed like the voice of an earthquake. On rushing out to ascertain the cause, he was astonished to discover a large stream of black stuff shooting high in air from the centre of the hole he had just dug. The stuff proved to be a specie of crude petroleum. The excitement caused by this outburst

throughout the neighborhood, as well as the entire Dominion, was intense. The natives who had so many years looked upon Shaw as a maniac now viewed him with admiration and esteem. He became a man of much influence in matters relating to oil, and though more successful in his endeavors to obtain the substance he had dreamed of existing beneath the surface than he expected, yet he maintained his equilibrium to a remarkable degree. His reply to questions regarding his tenacity and pluck in sticking to the text that he had preached on for so many years was generally, "I told you so."

This was, of course, an important event for that portion of the Dominion. The almost barren bogs of Enniskillen were sought after by speculators from all parts of the country and from across the borders in the United States, and the work of digging holes in the ground commenced with great energy. Lands which were considered almost valueless prior to this event, changed hands at figures ranging from $500 to $2,500 per acre. In other instances one-third royalty was paid, and from $200 to $500 an acre bonus. The well continued to flow at short intervals for about three days, at the rate, it was supposed, of from 500 to 800 barrels a day. It then subsided, and had to be pumped ever afterwards, and yielded several hundred barrels a day for a long time. The commotion created throughout the entire Dominion caused such a rush to the scene, that a town sprung up near the site of Shaw's spouter, to which was given the title of Oil Springs. New wells were dug in great abundance in the neighborhood, but all were not so extremely successful as the first, though a fair percentage resulted quite satisfactorily. In but few cases, however, were flowing wells obtained until about three years from the advent of Shaw's gusher, when, on Black Creek, in the same township, some of the largest wells ever obtained in any country were struck. In January, 1862, this latter section was opened, by the striking of a 1,000-barrel-flowing well, and before a year had passed there were two score of such drawing from a source that was considered almost inexhaustible. Some of these wells were the largest ever found, and gushed forth from crevices in the first rock found after digging through the surface soil. Notwithstanding the price of the production had descended until it was given away in bulk for anything, or any price obtainable, the work of sinking new wells continued with a haste that seems perfectly ridiculous in a civilized region. Some of the wells flowed 3,000 barrels a day, and it is averred by an eye-witness that in two or three cases there were wells that belched forth over 5,000 barrels per day each. The oil could not be saved, and floated on the surface of the rivulets, and spread over the marshy swamps, forming a scum several inches in thickness. The oil was extremely odorous, and of a dark color, and seriously effected the water supply of the country. Before the price of the stuff advanced to any great extent the "bottom fell out" of the supposed inexhaustible storehouse, and the Canadians found themselves with but a limited supply in a year or two afterwards, when their production would have brought ten dollars a barrel. It is estimated that over five million barrels of this oil floated away on Black Creek alone, and was lost to the world. At one time the oil on the creek was fired, and one of the grandest scenes ever witnessed by the eye of mortals was the result. The heavens were illuminated at night by this great pillar of fire, so that the reflection was seen a hundred miles distant. By day black clouds of smoke obscured the light of the sun, and terror seized hold of the inhabitants of Black Creek and vicinity. It was truly an awful scene, and is talked of to this day by some of the ancient inhabitants of Enniskillen.

After the exhaustion of the Black Creek pool, operations throughout the field moved very slowly, and new developments occurred at rare intervals. Seven miles north of Oil Springs is situated the Town of Petrolia, which is now the metropolis of the Canadian oil region. The supply at the present time is limited to a few thousand barrels a day, and the great majority of new wells yield not to exceed three barrels a day each. The extent of country in which the substance has been discovered and produced, in greater or less quantity, is tolerably great. Including all the pools, it would require 175 square miles to cover the entire area. But the greater part of this amounts to nothing in the way of affording increased sources of supply. The region in which the liquid is found, or is known to exist, at the present time, extends from within a few miles of Lake Erie, at its western extremity, to Lake Huron, and from the river St. Clair, eastward, sixty-five miles. This would constitute an outline forty miles wide and eighty miles in length, from east to west. The surface of the country is exceedingly level, and where dense forests exist the ground assumes a marshy condition.

The record of the average well of the latitude would be about as follows:

	FEET.
Sandy clay,	15
Hard blue clay, average thickness.	75
Limestone rock,	10
Gravel, average thickness,	8
Slate, soft, called soapstone,	15
Carniferous limestone,	50
Slate or soapstone (oil),	25
Limestone	250
Soap (oil),	52
Total depth,	500

Thus it will be seen the rocks of Canada do not agree with those of the Pennsylvania region, and the oil is somewhat heavier, being of a gravity of from thirty-five to forty-five degrees. In refining it produces seventy per cent. of illuminating oil, with more tar and residuum and less benzine than our product. The present mode of drilling is quite inferior to the American method, and where oil is supposed to exist wells are sunk on every acre of the land. The supply of the first wells, as above shown, was obtained near the surface, as was the case in our own country in the early days. Afterwards it was found necessary to drill to lower depths.

Before closing this chapter it should be stated that Shaw the original discoverer, by some injudicious use of money in speculations, became a complete bankrupt. In the beginning of his oily career he acquired great wealth, partly from money received as bonus for leases, and partly from his production, which he sold at from five to ten dollars a barrel. But he was a man of schemes, and by those means lost his fortune. In 1866, he came to Titusville, and worked on wells for a laborer's compensation, and in 1867, was seized with illness, and died a stranger, and almost unknown.

THE DIARY OF AN OIL MAN.

AN old diary recently found in an odd collection of books at Oil City gives such a true picture of the early days of Pithole, that we publish it for the benefit of those who are unfamiliar with the wild scenes it portrays.

Friday.—I arose a little sore this morning at daylight, and tried to mend my clothes before going down to breakfast, but my coat was too badly torn, so I was forced to borrow one from the hotel porter. I also found that my shirt front had received several decorations during the "relaxation" of the night previous, which in the excitement of the moment I failed to notice. These consisted of tobacco quids and stains that looked as if a glass of beer had been thrown at me. I procured a piece of chalk and gave the shirt-bosom a "circus wash;" or, in other words, chalked it over until it was a beautiful white.

Amused myself during the afternoon by playing billiards for the drinks, in the basement of the Chase House, and listening to the accounts of the row of the night before. Played forty games of billiards, lost thirty-six, which cost me, at forty cents per game, $14.40, while my bill at the bar was $26.90. I must shut down on some of my expenses.

Saturday.—Visited my new rig on the Rooker Farm, to see how the well was getting along. Everything is progressing finely and my men say they will have the driving pipe down by to-morrow and ready to go to drilling. I informed them that I generally observed the Sabbath myself (I did not mention how), and that it was my wish to do as little work as possible, but I had heard experienced oil men say that it "hurt a well to stop drilling over Sunday," and thought they had better keep the walking-beam going. The engineer informed me that he would need a steam gauge, and I told him to procure one, at the same time winking and nodding my head toward an engine house on the flats near by. When I arrived at my hotel at dinner time I found a quart bottle of Heidsick standing by my plate. I looked around to see who paid me this compliment and saw that every individual in the dining-room had been similarly treated. I afterward learned that one of the boarders had "struck a big thing on the flats that forenoon," and that this was the customary method of announcing this kind of success. Wrote to "Mary," saying "I was too busy around the well to write a long letter." Rubbed the letter and envelope over my boots to give them an oily look, smell and business appearance. Played pin pool until midnight, and went to bed ten dollars out.

Sunday.—This has been a dry day for me, as the stringent liquor laws of this State prohibit the sale of intoxicating liquors on the Sabbath. This does not have any reference to most of the whisky sold here, as the latter is so weak it cannot run out of the bottle, but has to be drawn out by suction. I found out, by going to my room and ringing the porter's bell, that I could obtain any drink desired, and I now feel easier under my vest. Mr. Muckett, who owns a well and lease near mine on the flats, informed me that some thief had stolen his steam gauge last night, but he had "suspected, and that he would look around to-morrow." I guess I will

go down to the well and see if my engineer has put his private mark on the steam gauge he purchased. Some one might claim it, and I should then like to be able to swear to it.

Monday.—The cheek of some men is wonderful! Old Mucket came to my well this morning and after prowling around a few minutes went away but shortly returned with a gang of men, and without saying a word attempted to unscrew the steam gauge that my employe had bought and paid for the day before. He said he thought he recognized a bale of sand pump rope as one that he had missed a week previous, and also intimated that my engine and boiler were bought in the night. I caressed him on the head with a heavy monkey-wrench at this point in the conversation; at the same time my employes wafted the rest of the cheeky Muckett's followers from the engine house. This country is full of rough characters with whom rough dealing is necessary to get along. Went to my hotel and read a chapter in the bible to compose my brain. I selected a portion of Solomon's song, and also where Samson slew three hundred asses with the jaw-bone of a Phillistine.

Tuesday.—The post-office was robbed last night, and I have just written to Mary that if she does not receive a letter from me containing money this week, she must lay it to the thieves who stole the mail-bags. I have half a notion to join the "swordsmen's club," an intellectual and political organization that has been started here to control the city election, and aid the cause of temperance by destroying all the liquor they can get hold of. I have not yet attended any of their meetings, but am told they are devoted principally to intellectual discussions, and that some of the oldest inhabitants are members of the club.

Wednesday.—Last night I was invited by the Judge of the Municipal Court of Pithole, to attend a public ball to be given by a certain class of citizens in honor to himself, the legal fraternity, and other prominent officials. I did not know that there was sufficient "society" in Pithole to get up a ball, but my friend assured me there was, and that in sociability the inhabitants excelled all other cities. I made a careful toilet, and about 9.30 P. M. hired a stout colored man to carry me on his shoulders to the scene of gaiety, which was in a long hall on Spring Street, and over a billiard-room and livery stable, the latter diffusing a delicious aroma of old mown hay through the hall.

My ticket read thus: "Grand Social Ball, for the benefit of Miss Nellie DeHaywood. Price fifty cents.

'Come one, come all,
To my grand ball.'"

I had never mingled much in good society previous to my coming to the oil region, but was not going to show my verdancy by asking any questions, so I ascended the stairs and found myself in the midst of three hundred dancers, male and female, who were in the mazes of a waltz. Before I had taken my hat off, a young woman with flaxen hair seized me around the waist and began to whirl me. Though surprised at what seemed a breach of etiquette, I was soon set at rest by hearing my friend, the police-justice, say, as we waltzed passed him, "that's all right, old man; she belongs to one of the first families of Pithole." My waltz made me dizzy; but I have a faint remembrance of hearing the fiddler say, "Chassez to the bar"; of pouring something down my throat that tasted like turpentine and goose oil, and then found myself, at day-light this morning, asleep under the front steps of the Chase House, with my hat, my pocket-book and watch gone; in fact, nothing left of me but underclothes and a headache.

Thursday.—I saw a man from Titusville get whipped this morning, because he remarked that Pithole was the most demoralized town he ever saw, and he had been around the world twice. Served him right. I do not see any of this demoralization. If it exists, it is not among the better class with which I associate. I hear that a man was shot, last night, in a "free-and-easy." He was a quiet, industrious bar-keeper in a boarding-house called the "Heenan Cottage."

A COMPARATIVE VIEW.

A COMPARATIVE view of the average price of pipe line certificates or crude at wells, for the months of January and February, for twenty years back, shows that the February price was higher than the January average in the following years: 1862, '63, '64, '68, '69, '71, '74, '75, '76 and '78. The net stocks of the United Pipe Lines have grown in the following manner, taking the month of December as a basis:

December,	1877	2,761,685 barrels
"	1878	3,896,730 "
"	1879	7,067,838 "
"	1880	15,008,573 "
"	1881	23,055,365 "

A 35,000 barrel iron tank has a latteral strain of 6,000 pounds to the square inch.

"SPIRIT" AND OTHER INFLUENCES IN LOCATING WELLS.

EVER since the striking of the Drake Well, at Titusville, the Oil Country has, among other strange and unaccountable things, endured the presence of "oil wizzards," or beings who have professed to be able to determine the exact locality of oil deposits, regardless of depth beneath the surface. Various instruments have been in use for this purpose, among which are the "Hazle-stick," or dowsing-rod, the "charmed bottle," and *departed spirits*. Each of these departments has had its votaries in numbers profuse. But during these later years they have decreased until the believers in such agencies in the work of detecting the exact locality of oil pools are rare exceptions. Still an occasional straggler is met with, even at this date. Of course, all sensible people who have given geology a passing thought discard the idea of any power beyond the drill to locate or define an oil field. Many good and substantial operators of the early years of the oil business followed the indications of the hazle-stick to a distressing consummation. Mr. John Rickets, deceased, of Plummer, Pa., was at one time, in 1864–'5, possessed of considerable wealth. His operations extended throughout nearly the whole length and breadth of the oil country, as then developed. He had been quite successful in organizing stock companies, and in a few instances, on Cherry Run, near Rouseville, had been so fortunate as to "strike oil." But by some means he was led away on this false and delusive theory that he could determine the track of the oil belt by the use of the crotched hazle-stick, and proceeded to drill wild-cat wells in every quarter of the region where the stick directed. The manner of use was by holding a forked limb in the hands, palms upwards. By this means the point would drop whenever the holder, in walking to and fro, came to certain localities. The dropping of the point was falsely ascribed to the effects of petroleum. It is true there is an agency which effects a rod held in this manner, but just what it is no person pretends to relate satisfactorily, except that the forked stick, which must always be green timber, becomes a proper conductor for the electric influence of the earth over the human system. As some systems are differently charged to others in this direction, it therefore transpires that the point will be effected in the hands of some while it will remain at perfect rest in others. However, the gentleman above named unfortunately followed the direction of the rod until his fortune was gone and he became a bankrupt. Even after this he persisted in the folly and by the aid of friends continued to drill wells in hope of regaining his lost fortunes, always drilling over the crevice indicated by the divining rod. This is but one instance of a number of similar characteristics that might be given.

The bottle is another of these delusive instruments. This consists of a four or five ounce bottle filled with a peculiar composition whose ingredients are, of course, a secret with the owners. To the bottle is fastened a fine string of similar texture to that used on an ordinary fiddle. The instrument is then swung by the neck and will hang perfectly at ease in some localities while at others it will perform as if agitated by some unseen agency. Its motions are always similar though more violent in some places than others. It seems first to cut right angles and will then change of its own accord and swing in a circle and if held long enough will re-change to its original method and so on *ad infinitum*. This is the more modern of the delusions mentioned, and is believed in by perhaps not more than three men in the region to-day.

The greatest humbug of all, however, is the spirit influence. Of those who have maintained that this agency was reliable, there have been greater numbers than in either of the cases above cited. The greatest apostle of this faith who has ever visited the region was a gentleman named James, who was the discoverer of the Pleasantville oil field through circumstances rather peculiar, to say the least, if his story should be taken as truth. This was to the effect that in riding with some friends to view a piece of property a few miles south of Pleasantville, he became suddenly and violently influenced by his attending spirit-guide. This power increased, until he hardly knew whether he was on the earth, Patmos or in Hades. He was forced by the influence across a fence close by and in such haste as to cause his companions to move on a dog-trot. After crossing the fence and fooling around through the field for some time, he finally fell on his back near the north end of the field, and on the very spot where he lay for an hour a derrick was afterwards erected, resulting in the "Harmonical Well," which started at 80 barrels a day. This occurred in February, 1868, and was the cause of the large development that followed in that section. Mr. James, therefore, for a time, enjoyed the distinction of the "boss locator." His subsequent adventures, however, had a tendency

to detract from the esteem in which he was held by the oil trade. In no case did he afterwards succeed in finding oil when his attempts were made beyond the limits of well-defined deposits. Relics of his delusion are to be found in Elk, Warren and Forest Counties, in the shape of dry and abandoned wells.

Thus endeth all theories of this character. In fact, there appears to be no surface means by which the exact location, extent or direction of oil belts may be determined. In some localities what are termed surface indications are exceedingly promising, while beneath there are no traces of the oil conglomerate. This is particularly true of some sections of Warren County. "Surface indications" are of two kinds, first: the appearance of an oily substance oozing from the surface of the earth, or from fissures of the rocks; and, second, the appearance of the pebbly or conglomerate sandstone upon the surface of the ground. The former has long since been lost sight of as a valuable omen, and the latter, though viewed with some regard, has but little significance at the present time.

Besides Mr. James, there have been many others of like persuasion, spiritualists, who have aspired to the reputation of knowing just where the big pools existed. But in all instances they have failed so signally as to leave the field in the year A. D., 1882, almost entirely free and bereft of their presence. And it is well for the country.

"THE PEOPLE WHO SAT IN DARKNESS SAW GREAT LIGHT."

THIS is not to be a sermon, though the subject is certainly a text of Scripture, found in St. Matthew's Gospel. Whether the speaker, when he uttered the words, fully appreciated what he stated, is a matter for the reader to enquire into. Certain it is, however, the prophecy has been fulfilled in our day and generation. Those who have sat in darkness may do so no longer, while petroleum is supplied at such remarkably low figures. When compared with the other commercial articles of similar use, it is forming a contrast much the same as that which exists between day and night, so far as its illuminating qualities are concerned. And, furthermore, as regards cost, similar parallels may be drawn. When we consider the fact that but a score of years have passed since petroleum began to attract the attention of commercial centres, it almost appears miraculous that it should occupy such an exalted position at this time. It is the wonder of the age, and were it not for the danger of intruding upon grounds popularly sustained regarding the statement made in our Scripture caption, we should feel like ascribing its bearing, or reference, to our day, and the product our Age represents. It, of course, required some effort during the early years of its history and development to influence public opinion in Europe and elsewhere and prove the superiority of petroleum over all other illuminants. It was not, in fact, until seven years had passed — the mysterious seven — that Europe became awake to its commercial importance. When recognized there, however, it required but a brief period to give it a firm footing in every port and market, from the Hebrides to the Golden Horn. It was not long after its introduction to Europe until petroleum was introduced into Asia, Africa, and the utmost islands of the Pacific Ocean. Wherever the Pennsylvania tourist finds himself in any part of the globe, there his eye will occasionally meet the pleasant sight of his native State's production, in packages which seem to have a very familiar appearance. It lights the room of the traveler as he notes the daily record in his diary at the hotel in Stockholm; it supplies the torch whose flame guides him through the damp catacombs of Rome; it gives forth the dancing rays which illumine the grand canal and the gondolas of Venice; it lights the cabin of the dehabeeah on its journey up the Nile; it fills the lamp of the tourist who penetrates the interior of the great pyramid; flickers and twinkles by night in the shop windows and streets of Thebes, and Athens, and Jerusalem; dispels the darkness in Calcutta, Hong Kong, Yokohama and Melbourne; it illuminates the harems of the Sultan at Constantinople, and flickers in the spacious halls of the Kedives—in fact, it matters not, now, where on the face of the whole earth the lot of man may be cast, there can be found supplies of America's great third rate staple. A small increase at each and every point in the use of the article must therefore cause a wonderful demand when the aggregate is acquired. The world is to be fully illuminated by kerosene at no distant day, and when all who sit in darkness, even now, shall have begun to see the great light, then shall speedily come the day of thankfulness and encouragement to the producer, manufacturer and dealer at the source of supply.

THE amount of illuminating oil exported for the fiscal year 1880–'81, was 332,282,945 gallons, worth $34,317,682.00.

THE MANUFACTURE OF LUBRICATING OIL FROM PETROLEUM.

REFINERIES located in the oil regions have seldom gained even a local notoriety, and, as a general thing, these enterprises have proved financial failures. The owners have never been able to secure rates on the several railroads that would warrant them in shipping refined oil to outside markets, and an attempt to secure local trade has resulted unsatisfactory. The Standard Oil Company competed in the market, and prices were usually placed below the point where competition was possible. The unfortunate local refinery, as a rule, has been forced to succumb, or dispose of itself to the highest bidder. One of the first establishments of the kind in the northern field was owned by Markham & Jordan, who built it in the year 1879, and it was located at Derrick City. This venture was sustained for about one year, but was disbanded for reasons only known to the owners. During the same period, the Tuna Valley Refinery, at Tarport, was running full blast, but the local trade being forced from this concern, it proved ruinous to the unfortunate owners, and they had to close up. Some time elapsed before the enterprise was again attempted, but during the past three or four years other small refineries located near Bradford have been running at intervals, and find a ready market for their illuminating oils, which are of a superior quality, and always made to the standard fire test required by law. The Pennsylvania Oil Works, Sam Backus, manager, is located near the Erie Branch in the city limits, and has a refining capacity of 150 barrels a day. Common oil and head-light oils are made a specialty, the sales being confined to local trade. The Relief Refining Company is located in the same vicinity, and is of about the same capacity, but only run the stills at intervals, or when they have orders to fill. At each of the above refineries there are no extravagant designs, everything being done in the most simple and inexpensive manner.

The "new departure" that we desire to speak more particularly about, in refining, is that by which lubricating and cylinder oil is made from crude petroleum, which is a very superior article to the expensive lubricating oils generally in use.

The Crescent Oil Company, located at Tarport, has a refining capacity of 150 barrels a day, and is under the business management of D. S. Scoville. This is an excellently constructed refinery, and possesses all the modern improvements. The owners make a specialty of lubricating and cylinder oil. The process of manufacturing it is owned by E. S. Dorrance, who has charge of this department. It is claimed that the lubricating or cold test oil will stand the freezing test at ten degrees below zero; is about twenty-seven degrees gravity, and entirely odorless. It is worth about $12.00 per barrel. The cylinder oil resembles "Vasoline," or "Cosmoline," which has come into such general use, and is sold at nearly every drug store in the country. The crude color is removed by filtering through bone-dust, and, after being treated by the new process, it is heated in the tank, when it becomes limpid, and is barreled for use. The above lubricating oils are subjected to a fire test of from 450° to 650° Fahrenheit. There is ready sale for the above goods, and also for the lubricating oils that are made at the same works. These are all the local refineries in the northern field at the present time. The Ætna Refinery, at Clarendon, Warren County, under the management of H. H. Redford, is a model affair in every particular. It has a manufacturing capacity of about 100 barrels a day, and, as in the cases cited, a specialty is made of lubricating and cylinder oils. It is located on the P. & E. Railroad, below the village. The stock is shipped direct to the New-York and other Eastern markets, where there is an increasing demand for all kinds of lubrics made from crude petroleum. This company has introduced the lubricating oils in Europe, and the result is they have a standing order of 500 barrels, to be furnished any time during the present year, from a large firm that makes a specialty of handling that species of oils. It is claimed that there is a greater percentage of illuminating oil in the Clarendon crude, but that the Bradford production is superior for lubricating manufacture. A Bradford refiner says there is very little waste or loss in crude in the present refining process, fully ninety per cent. being utilized, all for which there is ready sale, either in the shape of benzine, common, or headlight, or lubricating oils, or paraffine. He gave the following table showing the proportion of ingredients, as run from the stills, and as ascertained by a Baume hydrometer, viz.: Benzine cut off at 60 degrees, from 60 to 52 common oil; 52 to 45 headlight oil, 45 to 40 common oil; 40 to 36 paraffine, 36 to 25 lubricating and cylinder oils. This table may vary a little, but it will give practical refiners his idea on the subject. This system of using nearly every particle of the crude is a new departure, and the several products will become as necessary and in as ready demand as our

illuminating oils. There is no doubt that in the near future a large amount of the crude produced in this field will be utilized by local refineries along the valleys of Tuna Creek, and the specialty in each case will be lubricating oils, which are shortly to be in great demand for such purposes on every railroad on the American Continent.

OIL STOCKS.

Monthly Report of the Producers' Committee for December.

REPORTS were received, showing the amount of oil in wooden tanks at 8,350 Bradford wells, January 1st. Out of this number, figures were given so that a comparison could be made between the stocks at 7,950 wells, December 1st, and 8,030, January 1st. The parties who owned 7,950, December 1st, had 8,030 on the 1st of January. The additional number was gained in most instances by the completion of new wells. The averages in merchantable oil were as follows:

Division of Field.	No. wells Dec. 1.	Average per well Dec. 1.	No. wells Jan. 1.	Average per well Jan. 1.
		Bbls.		Bbls.
Tuna Valley	271	83.9	218	74 2
East and West Branches	1,182	113.3	1,205	102.9
Kendall Creek	1,237	78.4	1,247	78.9
Foster Brook	1,094	68.5	1,099	66.7
S., M., and Rixford	592	64.4	6)4	60.3
Cole Creek	1,019	127.3	1,030	112.6
Tram Hollow	600	56.4	603	59.1
Oil Valley	487	86.2	490	79.8
Kansas Bran	208	65.6	210	66.9
Indian Creek	391	93.4	398	83.6
Meek's Creek	87	66.7	87	64.2
Four Mile	330	89.2	337	80.6
Kinzua	104	149.6	105	123.0
Miscellaneous	402	102.9	397	82.1
Total	7,950	89.3	8,030	82.8

Figures from 8,030 Bradford wells show an average decrease of six and a half barrels per well during the month of December. A decrease in stocks took place in ten out of the thirteen sections into which the field is divided. The largest reduction was made on the Kinzua and the next in the water basin drained by the Cole Creek and its branches.

PRIVATE IRON TANKAGE.

The gross stocks in all private iron tanks in the Bradford field not turned over to the pipe lines aggregated 129,504 barrels Dec. 1 and 104,256 barrels on the first of the year. According to these figures, the gross stocks were reduced 25,248 barrels during the month or an average of 814 barrels daily.

BRADFORD'S DECEMBER PRODUCTION BY THE STOCK REPORT.

On the first of January, the number of wells producing in the Bradford field, or connected with the pipe lines, is estimated at 11,630. The number used on the first of December in the November report was 11,460. Producers who sent in figures on stocks at wells January 1st reported 17 wells that were abandoned in the Bradford field in December.

From the preceding data the following statement is made:

Time.	No. wells.	Av'ge per well.	Total Stocks.
Dec. 1,	11,460	89.6	1,026,816
Jan. 1,	11,630	82.8	962,964

Decrease in stocks in wooden tanks at wells during December	60,414	
Average daily decrease in wooden tanks during December	1,949	
Daily decrease in stocks in iron tanks	814	
Total daily decrease	2,763	Barrels.
The average daily pipe line runs in the Bradford field in December, exclusive of Richburg district, were		65,128
Total daily average decrease in stocks		2,763
Bradford's December daily average production		62,365
Bradford's November daily average production		64,766
Decrease between the two averages		2,401

In the above representation the 64,766 barrels is the daily average production for November, and the 62,365 barrels the average daily yield of the field for December. If the decline of the production were uniform each month these figures would show the production at the middle of the month. On the first day it would be higher and on the last lower. If the same ratio of decrease continued from the middle of December until January 1st that occurred between the middle of November and the middle of December, the production of the Bradford district on the first day of the year 1882 was less than 61,165 barrels. How much below cannot be determined until the average daily production for January is estimated.

THE DECEMBER RUN REPORT.

Exact figures on stocks at wells, December first and January first, with runs from the same wells, were forwarded, so that the average daily production per well for 3,640 Bradford wells could be computed for the month of December.

Since the telegraphic report was published runs have been received from an additional number of wells. The use of these has made this

report more comprehensive and also lowered the average per well which was first sent out. The subjoined table supplies the data used in calculating the averages:

Division of Field.	No. of wells Dec. 1.	No. of wells Jan. 1.	Stocks Dec. 1.	Stocks Jan. 1.	Runs during Dec.	Av. daily produc'n per well during December.
			Barrels.	Barrels.	Barrels.	Barrels.
Tuna Valley.....	162	162	18,574	16,589	18,954	3,378
E. and W. Branches	447	437	75,921	78,943	94,956	7,023
Kendall Creek.....	529	534	81,930	84,577	71,490	4,452
Foster Brook.....	493	497	71,335	68,845	65,842	4,092
S., M. & Rixford...	261	263	25,552	24,972	33,938	4,083
Cole Creek..	474	480	66,662	61,840	118,579	7,638
Tram Hollow.....	242	242	18,144	21,649	27,742	4,165
Oil Valley.....	302	304	33,942	32,608	55,771	5,772
Kansas Branch	51	51	3,738	2,875	4,733	2,448
Indian Creek.....	141	142	16,839	15,161	28,288	6,040
Meek's Creek	26	26	2,682	3,086	1,901	2,259
Four Mile...	125	126	13,985	16,197	21,324	5,251
Kinzua.....	32	32	4,645	4,645	5,520	5,200
Miscellaneous.....	365	371	43,168	43,168	64,068	5,474
Total.....	3,640	3,677	477,117	470,868	613,106	5,303

The average for the different sections this month will not admit of an exact comparison with those deduced last month, on account of different sets of wells entering into the calculations. If the stock report, which is based on averages afforded by figures from 8,000 wells, did not fairly check the run report, it would not be safe to estimate the production of the field from an average furnished by such a small number of wells. The exact number of wells should be known when any average is used as a factor in determining the production.

The Producers' Committee, consisting of John Brown, E. H. Barnum, Bateman Goe, A. B. Smith and E. F. Willets, have examined the above report and it meets with their approval.

J. C. McMULLEN,
Compiler.

BRADFORD, Jan. 25, 1882.

AN OLD OIL BELT.

IT is a remarkable circumstance that there exists to-day an oil belt, that is being operated slowly, that has for its central figure the site of the old Drake Well, on Oil Creek. The belt is very narrow, so far as defined, but its limits, longitudinally, have not yet been fully ascertained. The old Crossley & Barnsdale Well, the third drilled in that section of Oil Creek, continued to produce for years, and in fact is yielding a small quantity at the present day. It is now of age, being about twenty-one years old, and speaks strongly in favor of the territory surrounding.

By drawing two parallel lines, about one mile apart, with the Crossley and the Drake Wells near the centre, and running at an angle of about ten degrees east of north, and west of south a couple of miles, the belt is outlined. A recent writer on this subject states that for some time past it was thought by many that the oil on this belt was exhausted; but the Octave Oil Company, who for many years have been operating on this belt, and with splendid success, went back across the creek and drilled a well on the Lowry Farm, where they got some oil, and then put down another on the Young Farm. From there they went to the Thompson and Nancy Tands Farms, and got fair wells on each, which they pumped for several years. In the spring of 1881, they resumed operations on the Nancy Tands, and afterwards drilled on the Proviance Farm, on both of which they have succeeded in getting several good wells. Some six weeks ago they completed a well on the Nancy Tands that is now doing at least eighteen barrels of oil, and a week ago last Tuesday they finished a well on the Young Farm that is doing fifteen barrels of green oil of 47° gravity. This well is only 900 feet deep, and like almost all the wells on this belt has a first-class sand, one that almost guarantees it to be a stayer. The distance from this last well to the eighteen-barrel well on the Nancy Tands is about a quarter of a mile, and they have every reason to believe that every inch of the land between is good for from a fifteen to a forty-barrel well. They have another rig up on the Nancy Tands, and are now grading on the Young, and intend continuing their operations in that locality.

North of the latest Octave Wells, on the J. B. Duncan Farm, on the Enterprise Road, Mr. I. Willard has lately drilled several wells, by which he has demonstrated the same sand rock runs northerly in that direction; but he failed to get any grease. He intends continuing developments in that section in the spring. The last gas well located a little east by south of the old Newton gas well, on the old A. H. Nelson, now the J. J. Marsh Farm, finished a short time ago, got a good sand, but it was almost spoiled for a gas well by reason of the quantity of salt water, with some oil, that came into the hole; a sign, perhaps, that they are on the border of what may prove to be a spur of the same belt.

Much of the territory south of Titusville is still producing in paying quantities. Mr. M. Stewart struck his first well on the Robinson Farm, May 13th, 1875. It started off by flowing 150 barrels or more a day, and is now pumping over two barrels. A curious phenomenon on the Hyde Farm is that when the wind is blowing from the south they have a large quantity, and strong flow of gas, but when the wind is from the north they have but little.

THE PETROLEUM AGE.

DEVOTED TO THE

INTERESTS OF THE PETROLEUM TRADE.

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W. J. McCULLAGH AND A. J. CARR,
Editors and Compilers.

OIL producers are looking forward to a day of great rejoicing. After taking this from that, and the remainder from prospects of new territory, the result seems to indicate a healthy market in the near future.

THE demand which has already arisen for the PETROLEUM AGE in foreign countries is truly astonishing. Before we were aware that its publication became thoroughly known abroad, orders began to arrive for it.

AN error occurred in the statement in the January number of the production of the Bradford Oil Company's wells. Instead of 5,000 barrels daily, it should have said 500. The error occurred by the typo adding one cypher too many.

THE money panic in Europe, which occurred during the last week of January, had but little effect upon values in this country, which shows the substantial strength of American securities, as well as the stability of our financial system in general.

THE various tables of production, shipments, etc., have been properly corrected for this issue. Through the agency of a number of typographical errors which crept into the first number of the AGE, many of the footings appeared incorrect. Great care has been taken in this issue that no mistakes should occur.

A CARGO of petroleum may navigate a river, cross an ocean or lake in a vessel propelled by steam the oil has generated, acting upon an engine it lubricates, and directed by an engineer who may have greased his hair, anointed his body, perfumed his breath, enriched his food, rubbed his bruises, freshened his liver, waterproofed his boots, and removed any grease stains that may have overtaken his clothing, with the same article. Variety is said to be a spice which gives life vivacity, and truly petroleum must be "the spice of variety."

THE increasing cost and scarcity of tie timber are calling attention to the question of using iron as a substitute. Although this material has been successfully employed in Europe for some time, the first iron ties ever rolled on the American continent were, according to the *Railway Age*, turned out at a Western mill the other day. The ties weigh seventy pounds, are six feet long (though they can be made any desired length), and in shape are much like the letter U, or a trough with a flange at each edge. It is believed that they can be manufactured for about $2.00 each.

THE people of Canada are tolerably well suited with the "protective tariff" law, which prevents the importation of American petroleum in large quantities. Notwithstanding this, there is scarcely a town of importance from one end of the Dominion to the other, in which the better class of the inhabitants are not supplied with our commodity. Canadians, as well as others, know a good thing when they see it, and are also as willing to pay for a luxury. As a consequence, the price of Canadian oil has recently declined from $1.80 a barrel to $1.40, and at last accounts the market was "very weak." It is altogether likely that consumers are responsible for this state of things. They buy the American article, which is far superior to their own, and pay the difference gladly.

IN the very peculiar presentment handed "to the honorable, the Court of General Sessions," of New-York City, last Thursday, by the grand jury, who had heard the preliminary evidence in the Spuyten Duyvil matter, this paragraph appears:

"The Grand Jury further present that some approved method of car illumination other than by the use of mineral oil be adopted; that the heating of cars by direct radiation from stoves with coal fires should be abolished, and appliances should be introduced for heating by steam, hot air or hot water, to be conducted into the cars by pipes and coils from reservoirs outside the car, the fire-pot connected with the same to be placed below the level of the car floor."

Now, we presume it will be impossible, with the present facilities which railroads are possessed of, to improve upon the "use of mineral oil" for car illumination. An improvement, however, could probably be effected in the manner of using the oil. This could be done, by illuminating the car, by placing a light at either end, and outside of the car. This could be arranged with

a reflector similar to that used in the "head light" of locomotives. These could be placed over the entrances to the car, and by having a large pane of glass in the end, over the doors, the light would be properly reflected to all parts of the coach. The suggestions of the same body regarding the necessity of improved methods of heating cars, are undoubtedly worthy of attention, though they are by no means new. They suggest the use of hot air, steam, or hot water, from reservoirs kept outside and beneath the floor-level of the vehicle.

THE pipe-line system of the Oil Country is about all within the grasp of one corporation — the United Pipe Line Company. The Tide Water, the only opposition line, has a capacity of 10,000 barrels a day.

THE descriptive article, with drawings, on drilling tools, found in the fore part of this number, will be found quite interesting to readers of the AGE, especially those residing remote from the oil regions.

THE comprehensive and very reliable report of operations for the month of January, which appears elsewhere, is certainly an interesting document. It foreshadows events of vital interest to the trade, which must shortly come to pass. One of two things must occur in the near future; either new deposits of importance must be developed, or the price of production must materially advance.

IT seems that trouble in the coal regions will never cease. The Waverly Coal and Coke Company has just brought suit against the managers of the *Labor Tribune*, of Pittsburgh, together with R. D. Jones, President of the Coal Miners' Association. The suit is a civil action, alleging conspiracy, and for the sum of $70,000 damages. A lengthy list of grievances has been placed on file in the Court. Among these are found charges against the defendants for the unfair use of money in inducing miners to leave the employ of the company, by advertising in the public press, advising miners to keep away from the plaintiff's works, etc., etc.

It appears the co-operative system had been adopted, by which the miners received one-half the price the coal sold for, after deducting the cost of transportation. This system, on its face, looks very good, but it strikes us there is a large space allowed for "discriminations," "drawbacks," and "big salaries," etc., that the unfortunate miners might have to meet, unconsciously, in their settlements. Why is it that in the Oil Country there never has arisen a contest between employer and employed? The answer is obvious: oil men are disposed to pay good living wages to their employes under any and all circumstances. In no case have competent help ever been required to give their time without proper remuneration, even though the producer suffers heavy losses. When coal producers learn lessons of "justice to their fellow men," which they could learn by a short visit to the oil regions, they will have no trouble with their employes. There is no reason why coal should be mined and sold to consumers at prices below cost, and moreover, there is no reason why good living wages to miners should not be added to the cost. If competing companies see fit to run their business at ruinous rates, the managers and stockholders should be compelled by law to suffer the loss, and should by the same process, be punished severely for failure to properly compensate labor. Had this policy been pursued for the past twelve years in the coal regions, there would perhaps have been no "work of death" for the Mollies to engage in.

THE TORPEDO WAR.

THE operators in Allegany County, N. Y., are considerably agitated over the question of "war" against the Roberts' Torpedo Company, which claims the right by authority of law to explode nitro-glycerine in oil wells. It appears the practice so largely indulged in throughout McKean County, by the operators, of shooting their own wells, commonly termed "moonlighting," has been followed to a disagreeable extent in Allegany. Especially is it disagreeable to the Roberts Company, as no dividends accrue to it from such proceedings. The company, therefore, has applied, as usual, to the courts for protection. Last week from 150 to 200 operators were cited, as the initial steps, to appear on the first Monday of March, at Utica, N.Y., to answer; "otherwise the bill may be taken *pro confesso*." As a consequence, a meeting of producers was called at Richburg for Thursday evening, February 2d, to take measures for defense. It was determined by the assembly, which was large, to fight. The meeting took occasion to term the company a "monster monopoly." It would appear, moreover, that the "monster" holds the bigger end of the "bludgeon," by the use of which the war is to be conducted. In nearly all cases that have been brought to a conclusion in the Pennsylvania

Courts, success has been gained by the Roberts Company. As to the merits of the company's course, we have nothing to say at present. All that we know is that cases have been tried, and whether because "justice" has pressed the balance in favor of the company, or whether there have been other agencies used by which "justice" has been forced in that direction, it is not within our province to discuss, or undertake to determine. It is evident, however, judging from the action taken by the meeting referred to, and by the resolutions there passed, that the producers of the Allegany field especially are determined to test the validity of the Roberts patent. It is, of course, a question admitting of doubt, and should be brought to the attention of the Supreme Court of the United States. If the evidence adduced by the defense in the cases already tried in Pittsburgh is the best that can be produced, then why not force some of those cases to a speedy termination before the higher tribunal? This may be more speedily accomplished through the Courts of New-York, but it should be done, at all events. If the Roberts patent is valid, then it is but just that he be in its use protected. If not, the Roberts Torpedo Company is certainly a great monopoly sustained by fraud. Let us have light!

NEW USES OF PETROLEUM.

MR. W. K. McClees, Secretary of the Poughkeepsie Iron and Steel Company, has written the following letter regarding the use of petroleum as fuel in iron manufacture: We have two deoxidizers, each over a puddling furnace; they were finished only last week. They were both immediately filled with pulverized magnetic ore and pulverized charcoal. Each deoderizer has twelve retorts, say twenty feet high. As it requires about twelve hours to deoderize the ore, the furnaces were both charged with scrap iron, in order to get the heat utilized, and make bar, while waiting on the ore.

The petroleum was turned on from a half-inch pipe which entered a blast tuyere, atomizing the oil completely as it entered the combustion-chamber of the furnace. A half-shovelful of burning charcoal ignited it in ten seconds after entering, when a blast near by carried the flame over the bridge upon the iron, passing on through the deoxodizer, then through the boiler. The rapidity of melting scrap astonished old iron makers, and the quality of the bar, considering the quality of the scrap, was also astonishing. The flame could have been blown fifty feet. The granulated ore is carried to the top of the retorts by elevator buckets. The deoxidation of the ore is continuous. The ore is charged at the top in quantities to replace that drawn into the furnace.

A CORRY REFINERY.

CLARK & Warren, of Corry, Pa., are on the broad road to success, since they commenced the manufacture of Cylinder Oils. A few years ago they commenced in a little refinery at Sawyer City, Pa., an experimental affair, in which they were to test certain theories of Mr. Clark's, in regard to manufacturing lubrics from our ordinary petroleum.

Their different products are made from different oils. The Tidioute oil is used for certain purposes, while that of Butler County is utilized for other products. Again, the Bradford oil is preferred when certain results are desired.

An addition to their refining capacity has lately been made by the increase of another still, and a forty horse-power boiler, made by Ames, of Titusville. This will make their refining capacity 400 barrels a day. This, for lubricating works, is a tolerably large amount. The Brooks Oil Company, of Cleveland, Ohio, handles their products as General Agents, and have no trouble in disposing of all they can obtain from it. This success is well deserved, as these gentlemen understand all about their business, and attend to it strictly.

THE ALLEGANY FIELD.

TABLE SHOWING THE PROGRESS OF DEVELOPMENTS AND PRODUCTION OF THE ALLEGANY (N. Y.) FIELD.

Month.	No. of wells completed.	Dry.	Production.	Average per well.	Daily Production of Field.	Drilling.	Rigs.	Stocks in wooden tanks.	Stocks in Iron tanks.
Total, 1880	8	42	76	9½	76	4	6	. . .	. . .
January .	4	2	18	9	94	4	5	. . .	. . .
February	4	1	24	6	112	4	8	. . .	. . .
March .	5	2	60	12	162	4	7	. . .	. . .
April . .	3	1	20	10	170	5	6	. . .	. . .
May . .	4	1	48	12	212	20	21	. . .	. . .
June . .	14	8	130	9¼	327	24	35	. . .	. . .
July . .	22	5	275	12½	588	47	57	. . .	. . .
August .	53	17	586	11	1080	62	68	. . .	. . .
September	63	11	910	14½	1740	105	118	. . .	. . .
October .	96	5	1432	15	2896	164	198	38000	108891
November	154	10	2732	17½	5180	155	200	84666	142216
December	196	2	5115	26 1/10	8937	187	204	180200	169250
Jan. 31st :	162	2	3914	24 1/6	11123	191	209	270860	243147

THE first mineral lubricating oil exported from the United States was in 1869, and consisted of 134,532 gallons. During 1881, 4,852,203 gallons, worth $1,054,064.00, were shipped, an increase of 4,718,671 barrels.

REPORT
OF
OIL OPERATIONS FOR JANUARY.

WELLS COMPLETED.

TUNA VALLEY.

Lot.	*Operator.*	*Production.*
Scott, Abbott		18
Scott, Butts & Clark		15
Seward, Tracy & Cowles		12
Evens, Ward		12

EAST BRANCH.

E. T. Co., Benner & Casey		15
Hawkins, Union Oil Co.		12
Drake, J. S. Book & Co.		10
Deiter, Emery Oil Co		12
Foster, Tarbell & Shaffer, No. 8		10
B. I. Taylor, John L. McKinney & Co.		8
Hawkens, Markham, No. 8		10
Clapp, J. M. Clapp		15
Clark, Hanna		10
Brown, Geo. A. Berry		15
Shady, Watson & Fulton		12
Jewett, Quintuple Oil Co., No. 8		10
Stetheimer, Hill & O'Leary		12
Morris, Emery Oil Co., No. 29		10
" " " " 30		10

QUINTUPLE TRACT.

Wells	19
Production	228
Average	12

Lot 13, Hall & Gibson		12
25, J. S. Wilson, No. 1		12
31, Stetthemier, No. 2		15
39, Gillis & Hall		12
54, B. F. Brinton		15
70, Apple Bros.		12
73, Etna Oil Co., No. 2		12
103, Smith & Seaman		15
250, Butler & Martin		15
119, Venture Oil Co.		12
190, Wing & Co.		12
232, Wing & Co., No. 2		12
254, Clark & Foster, No. 2		15
256, Lord & Dewolf		15
258, Burrows & Co., No. 3		18
261, Brown & Watson		15
268, Gilbert & Shysman		12
216, Richards & Pickering, No. 5		15
276, E. H. Cowley & Co., No. 4		12
255, Clark & Foster		12
Wells		20
Production		243
Average		12

WEST BRANCH.

Mack, Fisher, No. 15		5
" F. E. Boden, No. 3		5
Kissam, Williams		12

FOSTER BROOK.

Bradley & Ernest, Bradley & Ernest		12
Willetts, Willetts & Bowen		15
" Smith & Co.		10
" Brawley & Co.		10
Snyder, Foxburg Oil Co.		10
C. B. & H. Wolf Dreiblebis		10
" Bailey		10
" M. S. Howe & Co.		15
" A. J. Coldren, No. 34		10
" Smith & Co.		10
" Argue & Co.		6
" Ralph Bros.		6
" Dewitt Oil Co		10

KENDALL CREEK.

Buchanan, Anchor Pet Co.		15
" "		15
Kellogg, Morrison & Co.		10
" Lauber		10
Schoowin, Amen & Co.		15
Moore, P. C. L. & P. Co.		10
" Marvin & Co.		10
Monroe, Simpson		12
Wells		24
Production		253
Average		10½

SUMMIT, MARION & RIXFORD.

Borden, Shear Bros. & Co. No. 10		10
Thurston, Wesley Chambers		12
Anderson, Brennan & Co.		10
Book, Hazelwood Oil Co. No. 33		20
" " No. 34		20
Ingram, Robert Gregg		10
Dodge, Allwood Oil Co.		0
Cornen, Cornen		10
Smith, Knox Bros.		16

TRAM HOLLOW.

Borden, Stewart & Co.		15
Hamlin, Daniels		10

STATE LINE.

Barse, Hays & Hastings		10
Angell, Angell Oil Co. No. 24		20
" " No. 26		20
Borden, VanVleck, No. 15		20
" Forman & Lawton		20
" "		18
Angell, Perrine		15
" M. J. Tufts		18
" Piper & Dauley		15

INDIAN CREEK.

Loup, Jas. O'Neil No. 10		12
" Peck & Freeman		10
Hamlan, Malory		10
" Follett		10
Palmeter, Purtell No. 11		10

MEEK'S CREEK.

Gale, Moore & Watson		15
Ayer, unknown		10
Gale, Curtis Bros.		10
Hamlin, Forest Oil Co. No. 31		12
Keatting, do No. 2		10
Wells		30
Production		398
Average about		13

FOUR MILE.

VanCampen, Quintette Oil Co.		20
Stevens, Blatchley & Farrel		12
" Book & Co.		10
VanCampen, Franchott Bros.		15
" Geo. Merrill & Co., No. 14		12
" E. W. Funk		10
Waters, Calkins & Kelty		12
Buzzard, Waccie Oil Co., No. 12		15
Johnson, Argue & Co.		12
Harbell, Coleman & Bell		15
" " " No. 12		15
Shattuc, Curtis & McCormick, 5		20
" Welsh & Vanschaick		20
" Eaton & Howe, No. 2		18
VanCampen, Geo. VanCampen		10
" Franchott Bros.		12

BIG SHANTY.

Bingham, Dent Oil Co., No. 14		30
" " " 15		25
" " " 17		40
Dent, " " 10		40
" " " 11		45
Bingham, Fertig, No. 3		15
Lot 92, Lockwood & McKevitt, No. 5		15
Sullivan, Mills & Mullin, No. 5		15
" Book & Tait		12
" Potter, Thompson & Co.		8
Hamlin, Minard Run Oil Co.		20
" " "		20
Dent, P. C. L. & P. Co , No. 22		15
Tunungwant, Book & Co., No. 3		25
Fox, Kearns		10

MOODY TRACT.

Moody Co., No. 76,		30
" Lot 60, Bayne, Clark & Co.		15
" " 67, J. W. Euber & Co., No. 3.		15
" " 67, Johnson & Kittinger		12
" " 67, Allshouse		10

MISCELLANEOUS.

Elk County, 3,655, Hallock & Johnson		dry
Potter County, Germania Oil Co.		dry
" J. M. Tait		dry
Wyoming, Wyoming Co.		dry
Wells		

COLE CREEK AND BINGHAM.

Rew, McDonald		10
Bingham, Johnson & Co.		12
" 465, Bayne, Fuller & Co.		15
" 178 and 9, Cumulative Oil Co., 9		15
" 470 and 1, Aiken & Whitney		25
" 478 and 9, Murphy, No. 9.		30
" " " 7.		40
" 468, John Eaton, No. 9		25
" " " 8		30
" 390, Forest Oil Co., No. 6.		15
G. & V. V. pur., Union Oil Co., No. 7		30
Simpson, Geo. V. Forman		30
" 391, A. J. Thompson, No. 11		15
Bordell, Spaine & Co.		15
Bingham, Aiken & Whiting		15
Simpson, Geo. V. Foreman.		30
Wells		56
Production		997
Average		25

WARREN FIELD.

CLARENDON.

Farm.	*Operator.*	*Production.*
Lot 35, Ackerley, Benton & Co., No. 2		6
77, Clinton & Co., No. 1		4
77, " 2		10
77, Ed. McDermot, No. 2		12
77, George Marsh, No. 1		dry
77, Stoughton		dry
78, D. Beatty		12
105, Sugart & Co., No. 2		10
105, Brinton & Co., No. 1		15
105, McCleary & Coltenbaugh		12
105, Branch & Co., No. 1		10
106, O. F. Schonblom		10
106, Coltenbaugh & Townsend		10
107, H. P. Malone, No. 3		10
108, Eureka Oil Co		12
162, Chas. Verback, No. 2		6
499, Merrill & Co.		10
528, O'Connor & Reed		10
528, Ed. Egan		15
528, W. B. Ash		10
528, R. Cochran		12
529, Dimick & Co.		10
579, Forquer & O'Donnel		12
Riddlesperger, Riddlesperger, No. 2		10
North Warren, Warren parties		15
Pittsfield, Pittsfield Oil Co		dry
Glade, James Roy		5
78, D. Beatty		10

SHEFFIELD.

Lot 396, Melvin, Walker & Co		15
397, Clark & Armor, No. 4		15
Fox, Kerberger		dry
Bear Creek, Cornwall		dry
Lot 396, Horton & Magee, No. 2		15
Wells		33
Production		303
Average		9

THE LOWER FIELD.

CLARION.

Farm.	*Owner.*	*Production.*
Leewalter, Leewalter Bros.		5
Richey Run tract, Crawford & Co.		6
Fox, Fox & Fink		6
Weller, Friar & Co.		7

BYROM CENTER.

Middleton, Young & Co.		6
McCandlass, J. P. Crawford & Son		12
Kohlmeyer, Goodrich & Co.		3
H. C. Anderson, Daniels & Dougherty		5

BUTLER AND ARMSTRONG.

Morgan, Simpson & Co.		16
Crow, Baldridge Oil Co.		dry
Parker, J. A. Parker & Co.		dry

VENANGO.

Boyd, W. P. McCray		15
Milton, Fisher Bros.		10
Wells		13
Production		91
Average		7

ALLEGANY FIELD.

ALMA.

Lot 4, Bush & Coel		10
17, W. T. Lewis		12
18, Anderson & Otis, No. 5		10
18, " " No. 6		10
18, " " No. 14		15
18, Harper & Breckenridge		10
38, Ira W. Shirley		11
38, L. Murket		15
38, Wm. Chambers		20
40, J. D. Downing		18
53, James Thornton		dry
121, J. D. Downing & Co.		10
121, Donnell & Co.		10
121, Hefferman & McDonald		14
144, Grinnel & Chandler		15
144, Fitzsimmons & Co.		15
Wells		16
Production		195
Dry		1
Average		12

WRIT.

17, John Bryan		dry
17, Taylor & Humphrey		20
17, Koch Bros.		25
25, Manhattan Oil Co.		45
25, Harry White		45
25, Baum & Clark		28
25, Fertig Bros.		20
26, J. C. Leonard		60

Lot 38, Allen & Taylor 25
33, Steel & Booth 20
33, McLeod Bros. 15
33, Kansas Oil Co. 25
33, Kansas Oil Co. No. 4 15
33, McCray Bros. No. 7 25
33, " " No. 8 25
33, H. E. Mulkin 10
33, Knox Bros. . . . . dry
41, Huff & Ege 30
41, Davis & Clemenger 15
41, Smith & Co. 20
41, Cranston & Leasure 15
41, Willman, Miner & Pitts 20
41, " " 25
41, J. Jordan 20
41, Buzzell & Johnson 15
41, Equitable Oil Co. 20
41, Baum & Son 20
41, Jordan & Murray 20
41, Bartlet & Johnson 15
41, H. C. Zeigler 20
41, Schmitz Bros. 18
41, Griffin & Co. 15
49, Ward & Gillegan 30
49, " " 35
49, A. A. Richardson 45
49, Finnegan & Nelson 35
49, Huff & Anderson 40
49, " " 45
49, Manhattan Oil Co. 35
49, " " 50
49, Smith & Saulsbury 45
57, T. J. Vandergrift, No. 5 25
57, A. J. Thompson & Loan 30
57, " " No. 7 25
57, " " No. 8, 10, 11 . . 75
57, Lynch & Snider 30

Wells 49
Production 1236
Dry 3
Average 25¼

BOLIVAR.

Lot 6, S. E. Karns 15
6, Woolf & Williams 30
6, Love & Penzer 20
8, Globe Oil Co. 10
8, Wiser & Kincade 15
15, John Moran 15
24, Fisher Bros. 10
24, Christie Bros. No. 4, 5 40
31, Coast & Foreman 15
32, Lupher Bros. 20
32, Brown & Reed 20
32, Short & Son 30
32, Hardison & Collins, No. 1 20
32, " " No. 8 40
32, " " No. 10 35
32, " " No. 11 30
32, Duke, Briody & Co. 30
32, " " " 25
32, " " " 35
32, " " " 30
32, C. C. Conroy 25
32, Black & George 25
32, Mark Shannon 20
32, Wm. Sawyer 35
32, John Cochran 30
32, Bradley & Green 25
39, Harding 20
39, H. P. Malone 20
40, Fertig Bros. 25
40, Meldrum Oil Co. 30
40, " " 30
40, Gilbert Farm Oil Co. 25
40, Anderson & Co. 30
40, Jeff Varney 20
47, Manhattan Oil Co. 10
47, Clarion Oil Co. 20
47, " " 20
47, " " 25
47, Forgie Bros. 15
48, Smith & Ziegler 20
48, A. W. Nelson 25
48, Emerson Oil Co. 15
48, E. Crawford & Co. 15
48, Hardison & Collins 20
48, Wiser Bros. 20
48, Frank Palmer 20
55, Stock & Keeler 20
56, Hamlin & Rose 30
56, Smith & Zeigler 55
56, McCalmont Oil Co. 40
56, " " 30
56, " " 35
56, " " 45
56, " " 30
56, " " 30
56, " " 35
56, " " 25
56, Humphrey & Anderson 55
56, " " 60
64, Cooper Bros. 45
64, Russell & Co. 25
64, Wellington Smith 25
64, " " 30
64, Ballard & Foreman 25
64, Fertig & Balliat 25
64, J. C. Cornwell. 25
84, Hoover & Thompson 35
64, Anderson & Greenlee 65
64, Painter Bros. 35
Lot 64, Painter Bros 30
64, Dyer & Co. 30
64, J. C. Linneman 30

Wells 73
Production 1995

Average 26½

GENESEE.

7, A. P. Tanner 5
8, H. J. Morton, No. 10 35
8, " No. 11 30
8, Willetts & Lovell 25
8, Isaac Willetts, No. 10 30
8, " 11 35
8, " 12 35
8, " 13 33
8, " 14 30
8, J. C. Linneman 40
8, Hays & Knox 40
8, " 20
16, " 10
16, Galey, Wheeler & Dusenbury . . . 10
16, Vandergrift & Miller. 15
16, Jones & Boughton 15
16, A. P. Tanner & Co. 10
16, Hardison & Collins 15
30, Duor & Roach 5

CLARKSVILLE.

9, Humphrey & Pierce 5
9, Empire Gas Co. 10
9, Johnson & Co. 15
9, Hardison & Co. 10
9, " 10

Wells 24
Production 488

Average 20⅓

DRILLING WELLS.

ALMA.

Lot 1, Empire Gas Co. . . . . sand
1, " " . . . . . rig
1, Phillips Bros. . . . . rig
4, Scott Elliott & Co. . . . . rig
4, Wellsville Oil Company . . . . . rig
17, O. P. Taylor, 9 . . . . . sand
17, " " 10 300
17, " " . . . . . rig
17, J. T. Lewis, 5 . . . . . rig
17, Belamy & Elliott, 4 200
17, Workman & Gaskill . . . . . sand
17, Gaskill & Workman . . . . . rig blg
18, Harper & Brockinridge . . . . . rig
18, Drake & Norton . . . . . rig bld
18, Anderson & Otis, 21 200
18, " " 20 . . . . . rig
23, " " 18 . . . . . rig bld
23, " " 16 . . . . . rig bld
23, Dow Bros. & Co. . . . . sand
23, Harper & Breckenridge . . . . . rig
39, Wm. Chambers . . . . . rig
39, Cole & Co. . . . . rig
40, Sheffield 1000
40, Morse & Williams . . . . . sand
40, " " 5 . . . . . rig bld
40, " " 6 . . . . . rig bld
40, Duke & Norton . . . . . sand
40, " " 13 1000
40, " " 14 . . . . . rig
40, " " 15 . . . . . rig
40, " " 16 . . . . . rig bld
40, Davies & Weaver 600
40, McCoy & Weeter . . . . . sand
121, Ira W. Shirley . . . . . rig
53, Elliot & Torrey . . . . . dry
121, J. Downing & Co. . . . . rig
121, Donnell & Co. . . . . drill
121, Hefferman & McDonald 300
121, " " " 6 . . . . . rig
143, Pennell & Co. 1200
443, Elliott & Parker . . . . . sand
143, Morse & Williams . . . . . drill
143, Bush & Cole 400
143, Murket 500
144, Cole & Blackman 1400
144, Grinnell & Chandler . . . . . rig
144, Love & Prescott 1200
144, Wm. Chambers 800
144, " " 500

Drilling 24
Rigs 24

Total 48

WIRT.

17, Taylor & Humphrey, No. 3 500
17, Anderson & Gamble 400
17, Kock Bros., No. 3 . . . . . rig
25, Option Oil Co. . . . . drill
25, Fertig Bros. 500
25, Fertig Bros. . . . . rig bldg
25, Kansas Oil Co. . . . . sand
25, Kansas Oil Co. . . . . drill
25, Kansas Oil Co. . . . . 2 rigs up
25, Kansas Oil Co. . . . . Drill—Drill
25, P. M. Shannon & Co., 4 . . . . . drill
Lot 25, P. M. Shannon & Co., 5 . . . . . rig
25, " " " 6 . . . . . rig blg
25, J. C. Minard & Co. . . . . rig
25, Rue & Shoemaker . . . . . rig
25, Fox & Barber . . . . . drill
25, Manhattan Oil Co. . . . . rig
25, Lem Whitney 400
25, Musenberger . . . . . rig
25, H. White, No. 2 . . . . . rig bld'g 400
25, Allen & Taylor . . . . . rig bld'g
33, G. V. Forman, No. 5 . . . . . sand
33, G. V. Forman, No. 6 600
33, Luce & Gable, No. 3 . . . . . rig
33, Patty & Bliss, No. 6 500
33, Patty & Bliss, No. 7 400
33, Knox Bros. . . . . rig
33, Dr. Pitts . . . . . drill
33, Dr. Pitts . . . . . rig
33, Dr. Pitts . . . . . rig bld'g
33, Thompson & Mattison . . . . . rig bld'g
33, Hawley & Sloan . . . . . sand
41, Hanover . . . . . rig
41, Peters & Co. . . . . sand
41, Gilbert Farm Oil Co. . . . . rig
41, Lester Cotterell & Co. . . . . sand
41, J. Jordon . . . . . rig, rig bldg
41, J. W. Davis, No. 6 . . . . . rig
41, J. W. Davis, No. 7 . . . . . rig
41, Wellman, Miner & Pitts 400
41, Wellman, Miner & Pitts 400
41, Wellman, Miner & Pitts . . . . rig bldg
41, Lester & Richardson 400
41, J. W. Mulken . . . . . drill
41, Evans & Griffin 200
41, Mattock & Taylor . . . . . rig
41, Flanagan & Co. . . . . rig
41, Woodard 300
41, Bliss & King 100
41, James Scott . . . . . sand
41, " 200
49, Humphrey & Anderson No. 6 . . sand
49, " " " 7 . . . 500
49, " " " 8 . . . 200
49, " " " 9 . . . 200
49, Dr. Whipple, No. 3 800
49, " " . . . . . rig
49, A. A. Richardson, No. 4 500
49, " " " 5 . . . rig bldg
49, Smith & Saulsbury . . . . . rig bldg
49, Manhattan Oil Co. & McNulty . . rig
49, " " " . . . rig bldg
49, Painter Bros. . . . . rig
49, Ward & Gilligan 600
49, " " 400
49, " " . . . . . rig
49, Finnegan & Nelson 800
49, " " . . . . . rig bldg
57, Thompson & Loan, No. 9 500
57, " " " 13 300
57, " " " 14 . . . . . rig
57, Lynch & Snider 200
57, " " No. 3 . . . . . rig
57, J. Vandergrift 200
57, " " 500
57, " " 400
57, E. W. Coleman & Co. . . . . sand
57, Reed & Kerwin 700

Drill 42
Rigs 41

Total 83

BOLIVAR.

Lot, 5, S. D Karns . . . . . rig
6, Wolf & Williams 609
6, Love & Pentzer 800
6, " " . . . . . rig
8, Joseph Story . . . . . sand
8, Hopkins 600
8, Empire Gas Co. . . . . rig
8, Alfred Lee . . . . . rig
14, Campbell Oil Co. . . . . sand
15, " " . . . . . rig
15, Skinner Oil Co. . . . . sand
16, Peck & Freeman . . . . . rig
22, H. J. Morton 1000
23, Conroy & Johnson . . . . . rig
24, D. Cameron . . . . . rig
24, D. Cameron . . . . . drilling
24, Boulton Bros. . . . . sand
24, Mooney & Galey 1200
24, " " 500
24, " " . . . . . rig
24, Milligan . . . . . rig
24, Fisher Bros. . . . . sand
24, " . . . . . rig
24, " . . . . . rig
24, Wilson & Whitcomb . . . . . sand
31, J. H. Shrum . . . . . rig bldg
31, " . . . . . rig bldg
32, Lupher Bros. & Bell, No. 4 400
32, " " " No. 5 . . . . rig
32, " " " No. 6 . . rig bldg
32, Brown & Reid 700
32, " " . . . . . rig bldg
32, Short & Son . . . . . rig
32, Hardison & Collins, 9 500
32, " " 12 200
32, " " 13 300
42, " " 14 . . . . . rig
32, " " 15 . . . . . rig bldg
32, Duke & Briody, 9 300
32, " " 10 600

Lot 32, Dilke & Briody, 11 500
32, " " 12 . . . . . rig bldg
32, C. C. Conroy, 4 500
32, Black & George, 5 500
32, " " 6 . . . . . rig
32, Wm. Sawyer, 3 . . . . . sand
32, " " 4 . . . . . rig
32, J. Cochran, No. 4 1000
32, " " 5 1000
31, " " 6 200
32, " " 7 . . . . . rig bldg
32, Bradley & Green 1000
38, " " . . . . . rig
32, Smith & Co., 6 1000
32, " " 7 900
38, Dyer, Carroll & Co. . . . . rig
38, Fisher Bros. . . . . rig bldg
39, Bliss & Donaldson . . . . . rig bldg
39, Whitney & Co. . . . . 2 rigs
39, Wiser & Kenkade, No. 1 300
39, " " " 2 . . . . rig bldg
36, Unknown . . . . . rig bldg
39, H. O. Neill, No. 2 . . . . . rig
39, H. P. Malone, No. 1 . . . . . rig
39, " " 2 . . . . . sand
39, " " 3 400
39, " " 4 . . . . . rig
39, " " 5 . . . . . rig bldg
39, Thompson & Young 300
40, Fertig Bros. 700
40, " " . . . . . rig
40, Meldrum Oil Co., 8 . . . . . sand
40, " " 9 . . . . . rig
40, Anderson & Humphrey . . . . . 2 rigs
40, " " . . . . 2 rigs bldg
40, McCalmont Oil Co. . . . . rig
47, J. Varney, No. 4 1000
47, " " 5 . . . . . sand
47, " " 6 . . . . . rig bldg
47, " " 7 . . . . . rig bldg
47, A. J. Thompson . . . . . rig bldg
47 Manhattan Oil Co. 200
47, " " . . . . . rig bldg
47, Clarion Oil Co. 1000
47, " " 400
47, " " . . . . . rig bldg
47, Barton & Warner 1000
46, " " 200
48, Fertig Bros. 1000
48, " " 800
48, " " . . . . . rig
48, Mitchell & Co. . . . . rig bldg
48, McCalmont Oil Co. . . . . sand
48, " " 500
48, " " 200
48, " " . . . . . drill
48, " " . . . . . rig
48, " " . . . . . rig
48, " " . . . . . rig bldg
48, " " . . . . . rig bldg
48, " " . . . . . rig bldg
48, Smith & Zeigler 200
48, Emerson Oil Co., No. 3 400
48, Wallace & Thompson 900
48, " " . . . . . rig
48, " " . . . . . rig bldg
48, E. Crawford & Co. . . . . sand
48, " " No. 5 . . . . rig
48, " " 4 . . . rig bldg
48, Hardison, Collins & Ritts 800
48, Frank Palmer 1100
48, " 400
48, " . . . . . rig
48, " . . . . . rig
48, " . . . . . rig bldg
48, Brawley Bros., No. 3 400
48, " " " 4 . . . . rig bldg
48, Durkee, Young & Co. . . . . rig bldg
48, Wiser & Co. 200
48, " . . . . . rig bldg
48, A. W. Nelson & Co. . . . . rig
48, " " . . . . . rig bldg
48, Richardson Oil Co. . . . . rig
48, Steel & Plummer . . . . . rig
48, S. Richardson 200
55, J. Hoffmann 500
55, " 200
55, " . . . . . rig, rig blg
55, Stock & Keeler . . . . . drill
55, Morton & Kencade . . . . . rig
55, Stratton & Wilson . . . . . rig bldg
55, E. W. McCracken 200
55, " " . . . . . rig
55, " " . . . . . rig
55, T. Williams . . . . . rig
55, A. J. Thompson . . . . . 3 rigs
56, Smith & Zeigler No. 3 400
56, " " 4 . . . . . rig
56, " " 5 . . . . . rig
56, No. 7 rig bldg, No. 6 1500
56, Anderson & Humphrey 500
56, " " . . . . . 2 rigs
56, " " 550
56, Richardson Oil Co. 800
56, " " 500
56, " " 400
56, " " . . . . . 2 rigs
56, Workman & Gaskil 500
56, Hamlin & Rose . . . . . sand
56, " " 600
56, " " . . . . . rig
56, Morse & Smith 900
56, " " . . . . . rig
56, McCalmont Oil Co. 200

Lot 56, McCalmont Oil Co. . . . . 2 rigs
63, Cooper Bros. No. 4 . . . . . rig
63, " " No. 5 . . . . . rig
64, Wellington Smith, No. 5 200
64, " " No. 6 . . . . . rig
64, " " No. 7 . . . . rig bldg
64, Dyer & Whitnall 1100
64, Hoover & Thompson 600
64, " " 200
64, " " 200
64, " " . . . . 3 rigs bldg
64, " " . . . . 1 rig bldg
64, Fertig & Balliatt 500
64, " " . . . . . rig
64, " " No. 13 . . . . . rig
64, " " No. 1 . . . . rig bldg
64, Anderson & Greenlee, No. 5 . . . sand
64, " " No. 6 200
64, H. & W. Hardison 600
64, Foreman & Ballard . . . . . sand
64, " " 500
64, " " . . . . . rig
64, J. Cornwall 1000
64, S. M. Reid 100
64, " . . . . . rig
64, Russell & Co. . . . . rig
64, Jete Linneman 1000
64, Flynn Bros. & Mackin . . . . . sand

Drill 89
Rigs 98

Total 187

GENESEE.

Lot 6, Genesee Oil Co. . . . . rig bldg
7, " " . . . . . rig
7, J. G. Haymaker . . . . . rig
8, A. P. Tanner . . . . . rig bldg
8, J. O. Johnson No. 3 1100
8, " 4 . . . . . rig
8, Hays & Knox 600
8, " " 300
8, " " 200
8, " " . . . . . 2 rigs
8, Merrill & Perrin 1100
8, " " . . . . . rig
8, J. C. Smith & Son . . . . . sand
8, " " . . . . . rig
8, Buzzel & Urquhart . . . . . sand
8, " " . . . . . rig bldg
8, J. C. Linneman 800
8, H. J. Morton No. 12 1100
8, " " 13 600
8, " " 15 200
8, " " 16 . . . . . rig
8, " " 17 . . . . rig bldg
8, Isaac Willetts No. 15 1000
8, " " . . . . . 5 rigs
14, Dodge & Wiser 400
16, Ellis, Willetts & Co. . . . . 2 rigs
16, Hardison & Collins 300
16, " " . . . . . 2 rigs
16, Morrison & Bennett 1000
16, Jones Bros 200
16, Reed & Keirwin . . . . . 2 rigs
16, J. S. Buzzel 1000
16, " . . . . . rig
16, Galey & Co. . . . . sand
16, " 900
16, " . . . . . rig
16, St. Joe Oil Co. . . . . rig
16, A. P. Tanner 200
16, Vandergrift & Miller 300
16, " " . . . . . rig
16, Unknown . . . . . 2 rigs bldg
16, Canfield . . . . . sand
21, Cranston & Willets . . . . . rig
23, Cass Bros 200
24, Book & Rhodes 300
24, Cranston & Willets 700
24, R. R. Armor . . . . . rig
24, Willets & Cranston 1000
24, " " . . . . . rig
30, Duor & Roach . . . . . rig
30, Short & Smith . . . . . shut down
30, Stevens & Spreter . . . . . rig
37, Hickman . . . . . rig

Drill 27
Rigs 33

Total 60

CLARKSVILLE.

1, Reno & Mulkins . . . . . rig
9, Humphrey & Pierce . . . . . rig
9, Henry Worthman . . . . . sand
9, Book & Rhodes . . . . . sand
9, " " 1200
9, " " 1300
9, " " . . . . . 5 rigs
17, Parkman & Co. . . . . rig
17, Capt. Brett . . . . . 300, drill
18, Huston & McKelvy 200
33, J. C. Jonson . . . . . rig bldg
34, Gilchrist & Co. . . . . sand
37, Congdon & Co. 400

Drill 8
Rigs 9

Total 17

MISCELLANEOUS.

Potter Co., Ben Thomas 600
Scio, Hardison & Co. . . . . rig
" No Name Oil Co. . . . . rig
" Wheeler & Co. . . . . rig
" Allen & Taylor . . . . . rig

Drill 1
Rigs 4

Total 5

BRADFORD FIELD.

TUNA VALLEY.

Lot.	*Operator.*	*Depth.*
Irvine	Irvine Oil Co.	800
Leonard,	Allen	rig
"	Leonard	near sand
Scott, L.	Bowers & Co.	rig, drill
"	Butts & Clark	150
"	Abbot & McGinnis	drill
"	Beatty & Haldeman	900
"	Beatty	rig

EAST BRANCH.

E. T. Co., Benner & Casey . . . . . drill
Newell, Book & Rhodes . . . . . rig
Drake, J. S. Book & Co. . . . . drill
American Oil Co., A. O. Co. . . . . rig, rig, 800
Cutting, Grey & Drakeman . . . . . sand
Wright, Keatly, No. 3 . . . . . drill
Deiter, Emery Oil Co. . . . . rig, rig, drilling
Pike, Book & Rhodes . . . . . rig
B. I. Taylor, Bovard & Seyfang . . . . . rig
" Breckenridge & Co. . . . . rig
" Haworth . . . . . drill
" Risher & Zeigler . . . . . rig, blg
Drake, Risher & Zeigler, No. 2 . . . . . drill
B. J. Taylor, John L. McKinney & Co. . . . rig
Clapp, J. M. Clapp . . . . . rig, 1,000, 400
Clark, Hanna . . . . . rig
Morris, Emery Oil Co. . . . . sand
" " " 800, 400
" " " . . . . . rig, rig, rig, rig
Howard, Gardner . . . . . at sand
Brown, Talley . . . . . fishing, sand
" Gardner . . . . . drill
" Shipman & Co. . . . . rig, blg
Tibbits, Emery Oil Co. . . . . rig
Degolia, Quintuple Oil Co. . . . . rig
Shady, Watson & Fulton No. 4 . . . . . drill
Drake, Watson & Fulton No. 2 . . . . . drill
Dykeman, Hampshear & W . . . . . drill
Jewett, Quintuple Oil Co., No. 9 . . . . . drill
Cory, A. Ford . . . . . drilling
" Caldwell . . . . . rig, 400

WEST BRANCH.

Kissam, Williams . . . . . rig
" Chapin & Co. . . . . rig
Canmer, Chapin & Co. . . . . rig
Wagner, Bradley . . . . . rig
Gas Hollow, Heald . . . . . rig
" " . . . . . rig, blg, rig, blg
Crocker, Crocker . . . . . rig, blg
" Hazelton 200
Tram Road, Union Oil Co. 200

Drilling 29
Rigs 33

Total 62

QUINTUPLE TRACT.

Lot 23, Ralph Bros. 1600
25, J. S. Wilson . . . . . rig
25, " . . . . . rig, blg
40, " No. 2 . . . . . rig, blg
42, Tarbell & Morris . . . . . rig, blg
49, Applebee . . . . . rig
52, J. C. Wales 1500
72, E. K. West . . . . . drill
136, J. H. Campbell 200
150, Woodburg & Campbell . . . . . rig
175, D. Atwater & Co. . . . . rig
196, H. A. Booth & Co. . . . . rig
180, A. F. Heald . . . . . rig
184, Hazelton & Co. . . . . fishing, 1200
186, Vroman & McGraw, No. 3 1400
205, J. A. Vera & Co. . . . . rig blg
193, M. J. Seymore . . . . . rig
103, Geo. Woodward . . . . . rig
213, Kane City Oil Co. . . . . rig blg
214, " " 1400
218, Gardner & Co. . . . . drill
219, Abbot & Proper 1600
120, Venture Oil Co. . . . . drill
227, Geo. McCullough & Co. . . . . rig blg
241, Barnsdall Bros. 700
253, Clark & Foster, . . No. 2, rig, No. 3, rig
254, " " No. 3 1700
254, " " . . . . . rig
256, Lord & DeWolf . . . . . rig
258, Burrows & Co., No. 4 . . . . . rig
264, Matthews, Boggs & Co. 1000
262, Richards & Pickering . . . . . rig
271, Eaton & Bundy, No. 2 . . . . . rig
Salem, Quintuple tract 1000
236, Wing & Co. . . . . rig blg, 1000
197, Heald, Sisco & Co., ... rig

Lot 277, Dr. Baker . . . . . drill

Drilling 16
Rigs 22

Total 38

KENDALL CREEK.

Melvin, P. C. L. & P. Co., No. 54 . . . . . drill
" " " No. 55 . . . . . rig
Richardson, Smith . . . . . rig
Davis, Adams . . . . . rig
Boyd, Zane & Taylor 1200
Buchannan, Anchor Pet. Co., No. 13 800
Enterprise, " " . . . . . sand
Brennan, Van Vleck . . . . . drill
Moore, P. C. L. & P. Co. . . . . rig
Mack, West . . . . . rig
Moore, Huff & Ege . . . . . rig
Dolloph, Tarbell & Co. . . . . rig
Raub, Pettibone . . . . . drill
Fisher, Wheedon . . . . . rig
Turner, Swingle 200

FOSTER BROOK.

Bradley, Bradley & Ernest . . . . . rig
" " " . . . . . drill
Tait, Tait . . . . . rig
McMurray, McMurray 700
McKelvy, Dewett & Co. . . . . rig, 200
Baum, Richardson & Co. . . . . rig
C. B. H., Wolfe & Dreibbis . . . . . drill
" M. S. Howe & Bro. . . . . drill
" " " " . . . . . rig
" Lot 25, Treat & Porterfield . . . drill
" " " " . . . . . rig
" Daniels . . . . . rig
" A. J. Coldren . . . . . rig, rig, rig
" Eighmey Bros. . . . . drill
" Argue Bros., 200 . . . . . drill
" H. E. Pickett . . . . . rig
" Buzzle 400
" Young & Co., ... 800

SUMMIT, MARION AND RIXFORD.

Borden, Shear Bros. & Co. . . . . fish, sand
" " " No. 11 . . drill—rig
" C. B. Whitehead, No. 1 . . . . . rig
Mather, " No. 6 500
" " No. 7 . . . . . rig
Borden, Lavens . . . . . drill
" " . . . . . rig
Thurston, Judd & Glass . . . . . rig
Smith, Knox Bros. . . . . drill
" Bowers & Howell . . . . . rig
Borden, Braunschweiger & Co. . . . . drill
Irons, Duke Centre Gas Co. . . . . drill
Chambers, Hazelwood Oil Co. . . . . drill
Book, " No. 25 . . . drill
" " No. 36 . . . rig
" " No. 37 . . . rig
Borden, Oak Shade Oil Co., No. 6 1400
Ingraham, Robert Gregg . . . . . drill
Patterson, Gregg 500
Cumings, Zimmerman 100
Whitcomb, Hardly Able Oil Co. . . . . drill
Borden, Urquahart & Lavensig 1000
Dodge, Bradner & Bozer 600
Cornen, Cornen 800
" " . . . . . rig
" " . . . . . rig blg

Drilling 34
Rigs 32

Total 66

TRAM HOLLOW.

Borden, Tanner . . . . . rig

OIL VALLEY.

Hamlin, Daniels . . . . . rig
Duke, Dunn & Co. . . . . drill
" " . . . . . rig

STATE LINE.

Barse, Hays & Hastings, ... drill 1700
Angell, Angell Oil Co. . . . . 7 rigs up
Fullerton, " " . . . . . 4 rigs up
Borden, Forman & Lawton . . . . . drill
" " " . . . . . rig
Angell, Hogan & Murphy . . . . . drill
" Johnson 500
" Williams 1600
" Waugh & Co. . . . . rig
" Burns Bros. . . . . sand
" O'Dell . . . . . rig blg
Barse, Downing . . . . . drill
" Ryan & Co. 1300
" Unknown . . . . . rig bldg
C. B. & H. Mitchell . . . . . drill
" " Tait . . . . . drill

Drilling 11
Rigs 18

Total 29

INDIAN CREEK.

Loup, J. D. Downing & Co., No. 13 800
" " " No. 1 . . drilling
Loup, Jas. O'Neil, No. 11 . . . . . rig
" " No. 12 . . . . . drill
" Hart & Hicks, No. 17 . . . . . drill
" " " No. 18 . . . . . rig
" Peck & Freeman . . . . . rig
" Follett Bros. 900
" Gibbons . . . . . rig
Hamlin, Chautauqua Oil Co. . . . . rig
" Mailory . . . . . rig bldg
Pine Lot, Eckerly . . . . . rig
Palmeter, Purtill Bros., No. 11 1000
" " " No. 12 . . . . . rig
" Leonard . . . . . .
Weston, McNulty . . . . . rig
" Unknown 100
Loup, Burton . . . . . drill
" unknown . . . . . rig
" " . . . . . rig bldg
Hamlin, Triangle Oil Co. . . . . rig

Drilling 6
Rigs 13

Total 19

MEEK'S CREEK.

Gale, Curtis & Taylor, 5. . . . . drill
" " 6. . . . . rig
Hamlin, Forest Oil Co., 32. . . . . rig
Keatling, " " 26. . . . . rig
" Thompson & Canfield. . . . . rig

FOUR MILE.

McCartney, McCartney . . . . . rig
Donahue, Brown & Norris . . . . . rig
Van Campen, Quintette Oil Co. 1500
" " . . . rig, rig, rig, bldg
Stevens, Dudley & Palmer . . . . . rig
Book & Rhodes . . . . . rig
Van Campen, Geo. Van Campen . . . . . 2 rigs
" Rockway . . . . . drill
" Franchott Bros. rig 1400
" Brahany & Co. . . . . rig bldg
" Geo. Chamberlin . . . . . rig bldg
" Various parties . . . . . drill
" " . . . . . 2 rigs bldg
Buzzard, Waccie Oil Co . . . . . drill
" " . . . . . rig
Johnson, B. Alvord . . . . . near sand
Joe Waters, Howard & Baum . . . . . sand
" Gillespie . . . . . rig
Harbell, Coleman & Bell, 13 . . . . . rig 1600
Shattuc, Curtis & McCormick, 6 . . . . . drill
" " 7 . . . . rig bldg
" Welsh & Van Schaick. 1500
" Eaton & Howe, No. 3 300
" " No. 4 . . . . . rig
Hallender, Brown, shut down 1200
Garr, Curtis . . . . . rig
Various sections, unknown parties . . . . . rig
" " . . . . rig bldg
Joe Waters, Williams & Garr. . . . . rig

Drilling 14
Rigs 28

Total 42

KINZUA.

Bingham, J. M. Tait. 500
" J. M. & T. Tait . . . . . rig
U. Oil Co., U. Oil Co. . . . . shut down, sand
" " No. 23. . . . . rig
" " No. 31. . . . . drill
" " No. 32. . . . . rig
Carter & Hurd, Carter & Hurd . . . . . rig

VANSCOY SECTION AND SUGAR RUN.

English, Dew Drop . . . . . drill
McIntyre, McIntyre & Co . . . . . rig bldg
" Chapin & Co . . . . . rig bldg

BIG SHANTY.

Bingham, Dent Oil Co., No. 17. 300
Dent, Dent Oil Co., No. 7. 250
" " " No. 12. 900
" " " No. 13. . . . . sand
" " " No. 14. . . . . rig bldg
Bingham, Kishewauka Oil Co., No. 26 . . . 1000
" Fertig, No. 4 . . . . . drill
156, J. J. & T. J. Vandergrift . . . . . sand
93, Lockwood & McKevitt, No. 4 . . . sand
93, " " No. 6 . rig bldg
Sullivan, Waugh & Porter . . . . . sand
" Mills & Mullen, No. 4. . . fishing, sand
" " " No. 6. . . . . rig
" " " No. 7. . . . . rig
" Book & Tait 1000
" 91, Union Oil Co., No. 15 1200
" " " " " No. 16 400
Taylor, Mills & Mullen. 800
Hamlin, Minard Run Oil Co. 1700
" " " . . . . . drill
" " " No. 12. 300
Dent, Whitney & Wheeler 1600
" " " 800
" " " . . . . . rig
" " " . . . . . rig blg
" P. C. L. & P. Co., No. 23. . . . . drill
" " " No. 24. . . . . rig
" " " No. 25. . . . . rig blg
Tunungwant, Book, No. 3 . . . . . drill
" " No. 4 . . . . . rig blg
Fox, T. Mullen . . . . . rig blg
Fox, Other parties . . . . . 2 rigs blg
Bingham, John McKeown 1500
" Smith . . . . . drill

MOODY TRACT.

Moody Co., No. 77 1800
" No. 78 1600
" No. 79 . . . . . rig
" No. 80 . . . . . rig
Lot 56, Jennings No. 4 . . . . . rig
60, Bayne, Clark & Co. . . . . drill
Other parties, rig building . . . . . rig

Drill 30
Rigs 23

Total 53

COLE CREEK AND BINGHAM.

Columbia Oil Co., C. O. Co. . . . . rig
Bingham, Hamlin & Rose 1200
" " 250
M. W. & H., R. Jennings . . . . . rig
" Grace & Spain . . . . . rig
" Forest Oil Co. . . . . sand
" W. W. Thompson 1500
Lot 365, Tucker & McCormick. 1400
387, Kennedy . . . . . rig
453-4, Bayne, Fuller & Co., 42 1400
453-4, " . . . . . drill
178-9, Cumulative Oil Co., No. 7. . . . sand
178-9, " . . . . . rig
470-1, Aiken & Whitney 1700
470-1, " 620
470-1, " . . . . . rig
470-1, " rig bldg . . . . rig
478 and 9, M. Murphy, No. 8. 1500
" " 9. 200
468, John Eaton 5 1200
" " 6 1700
466, Cornwell . . . . . near sand
502, Forman & Union Oil Co . . . shut down
491, " No. 8 . . . . . rig
461, " 9 . . . . . rig
491, " 10 . . . . . rig
491, " 12 . . . . . rig
469, John L. McKenney & Co. . . . . drill
469, " . . . . . rig
406, " No. 2 1400
439, " 3 . . . . . rig
G. & V. pur., U. O. Co., No. 16 . . . . . rig
" " 17 . . . . . rig
" " 18 1700
" " 19 . . . . . rig
" " 25 . . . . . rig
" " 26 . . . . . rig
" " 27 . . . . . rig
" " 24 800
Lot 488, Johnson & U. O. Co., No. 25. . . rig
" " 28. . . rig
" " 32. . . rig
Simpson, Geo. V. Foreman. . . . . sand
" " 1400
" " 800
" " . . . . . rig bldg
Lot 391, A. J. Thompson, 18 . . . . . rig
Bordell, Brown & Duthill, No. 2 300
" Various parties. . . . . 2 rigs bldg
Coleville, Schoonover. . . . . rig
Gas streak, Unknown. . . . . rig
409, J. L. McKinney, No. 8 400
" " No. 9 . . . . . rig
406, " No. 2 1600
439, " . . . . . rig

Drill 26
Rigs 31

Total 57

WARREN & FOREST.

CLARENDEN.

Lot 55, D. Beatty . . . . . rig
56, Union Oil Co. 900
76, Geo. Givens . . . . . abandoned
77, Clinton & Co. . . . . rig bldg
77, Ed. McDemot, No. 3 500
77, O. Hoffman . . . . . sand
77, Unknown parties . . . . . rig
77, Wynkoop . . . . . rig
78, D. Beatty rig 1200
79, Capt. Butler . . . . . rig
79, Marsh, Kuhn & Co. . . . . drill
80, Barnsdall . . . . . drill
80, Thayer . . . . . rig bldg
80, Groves . . . . . drilling
80, Windsor Bros. 800
80, " " . . . . . rig
105, Brinton & Co. No. 2 . . . . . rig bldg
105, Atkinson & Co. No. 4 . . . . . sand
105, George Given 1200
105, Branch & Co. No. 2 . . . . . drill
105, Shirt, Oyster & Co. . . . . rig
105, Fisher & Weaver . . . . . rig
105, Archbold & McClure No. 6 . . . . drill
105, Unknown parties . . . . . 2 rigs
106, O. F. Schonblom 200
106, J. Roy . . . . . drill
106, Geo. Given . . . . . drill
106, Conrath Bros. . . . . rig bldg
106, F. H. Rockwell, rig . . . . . drill
107, H. P. Malone . . . . . drill
108, Grandin & Hague . . . . . rig
108, Duke & Co. . . . . rig

Lot 101, Grandin & Co. . . . . rig
162, Clark & Armor . . . . . rig
397, Roth & Co. . . . . near sand
497, R. Thompson . . . . . drill
498, Hopewell & Bell No. 2 500
498, " 3 . . . . . rig bldg
498, Kelley & Richards No. 3 1000
498, Reed & Co. . . . . rig
498, Ed. Egan . . . . . rig
498, Elias Katz No. 3 . . . . . drill
498, E. A. Smith & Co. . . . . rig bldg 500
498, Conway & Young . . . . . rig bldg
499, Taggart & Co. No. 2 . . . . . rig
494-5, Sherman & Estep No. 6 . . . . drill
527, Townsend . . . . . rig bldg
527, Rockwell . . . . . rig
528, R. Cochran . . . . . rig
528, Armstrong & Speer No. 6 . . . . . sand
528, " 7 . . . . . rig
528, " 8 . . . . . rig
528, " 5 200
646, Dimick & Co. 300
—— Clark & Jackson . . . . . rig
2837, Clark & Armor, shut down . . . . sand
Bugbee, John Bryan . . . . . rig
Lot 597, Hoffman & Bryan . . . . . rig bldg
Jacknie, Jessie Johnson . . . . . rig
Watson, Brown Bros. . . . . rig
530, O. F. Schonblom . . . . . drill
557, Bryan . . . . . drill

SHEFFIELD.

409, Union Oil Co. . . . . drill
406, MaGee & Horton, No. 5 . . . . . sand
408, " " No. 6 . . . . . drill
408, " " No. 7 . . . . . rig
428, " " No. 8 . . . . . rig blg
438, Emerson & Shank, No. 2 . . . . rig blg
Williams, J. L. McKinney & Co. 1600
212, Truby & Co. . . . . rig
368, MaGee & Horton . . . . . rig
397, Clark & Armor, No. 5 . . . . . rig

FOREST COUNTY.

2730, Reno Oil Co. . . . . drill
Cook, Manwaring . . . . . drill
407, Shank & Co. 500

Drill 36
Rigs 42

Total 78

THE LOWER COUNTRY.

CLARION.

Farm.	*Owner.*	*Depth.*
Edenburg,	J. D. Callahan	rig
	Updegraff, Jeuerette Bros.	rig
	Call, Smith & Butler	600
	Egypt, M. E. Hess	800
	Wentling, Wentling & Putnam	rig
	Stratton, Vanness	400
	Fillman, J. Fillman	rig
	Richey Run, Moore & Co.	500

BYROM CENTRE.

Middleton, Martin & Co. . . . . rig
D. R. Crawford, Steelsmith & Co. . . . . rig
" Porter & Phillips 500
" Rowley, Graham & Co. rig bldg
J. H. Crawford, E. G. Crawford . fishing in sand
Robinson, E. K. Robinson 450
Sutton, T. Hays 1000
A. Anderson, Duncan & Newton 350
" Trout Run Oil Co. 1000
Miller, Adams, Storey & Tash . . . . . rig
Grant, Grant Bros. & McElree 250

BUTLER AND ARMSTRONG.

Leonard, Leonard & Parker 700
Bell, A. Shidemantle 1000
E. Robinson, A. C. Scott 500
Thomas, Thomas & Co. 600
R. W. Jemmison, Hyland & Hutchison . . . 900
H. J. Clark, A. Crittenton & Co. . . . . rig
S. A. Crawford, J. G. Widger & Co. 200
Brady's Bend Tract, Hunter & Cummings . . rig
Shakley, Hagerson Bros. & Co. 500
Gibson, Monroe & Wasson 1100
Eichenlaub, Philipps Bros. . . . . sand
Hammel, Simcox & Myers 1150
Duffort, K. McBride 1100
Miller, McConnell & Morrisey . . . . . rig

VENANGO.

Furnace Tract, Fisher Bros. . . . . drilling
Branon, Wolf & Kugler 100
Gates, Rousville Oil Co. 400
McCalmont, P. McCalmont . . . . . rig bldg
Kauffman, A. Dale . . . . . rig bldg
McBride, McBride & Co. No. 3 . . . . . rig bldg
" Milton & Co. 800
Allison, Wolfe Bros. 200
——, Johnson & Co. . . . . rig
Weiss, Nesbit & Co. . . . . rig
Murphy, Murphy & Co. 300

Drill 27
Rigs 14

Total 41

SUMMARY.

Completed Wells.

	Wells.	*Production.*	*Average.*	*Dry.*
Tuna Valley, East Branch	19	228	12	—
Quintuple Tract	20	243	12 1-6	—
West Branch, Foster Brook, Kendall Creek	24	253	10½	—
Summit, Marion and Rixford, Tram Hollow, State Line, Indian Creek, Meek's Creek, Four Mile, Big Shanty, Moody Tract, Miscellaneous, Cole Creek & Bingham	30	398	13¼	—
	56	997	18	4
TOTALS	149	2,119	14 1-5	4
Allegany	162	3,914	24 1-6	2
Warren and F	33	303	9	5
Lower Field	13	91	7	2
GRAND TOTALS	357	6,427	18	13
Grand Totals, Dec	405	8,185	20	10
Decrease, January	48	1,758	2	inc. 3

Drilling Wells.

	Drilling.	*Rigs.*	*Total.*
Tuna Valley, East Branch, West Branch	29	33	62
Quintuple Tract	16	22	38
Kendall Creek, Foster Brook, Summit, Marion & Rixford	34	32	66
Indian Creek	6	13	19
Meek's Creek, Four Mile, Kinzua	14	28	42
Big Shanty, Moody Tract	30	23	53
Cole Creek and Bingham	26	31	57
T., H. & State L.	11	18	29
TOTALS	166	200	366
Allegany	191	209	400
Warren and Forest	36	42	78
Lower Country	27	14	41
TOTALS	420	465	885
Totals, December	453	457	910
Decrease, January	33	..	25

THE OUT-LOOK.

WHILE the production of the region still exceeds the amount necessary to supply all the requirements of the trade, yet there are sufficient encouragements, resulting from the manner in which operations were conducted during the month of January, to revive hope of improvement. The export trade continues active, showing a large increase over the corresponding period of last year. It is, furthermore, quite evident that the supply is liable very soon to fall below the estimated wants of the trade. When new fields reach their greatest altitude in daily yield, and that fact becomes thoroughly established, they begin to lose power in effecting prices. So long as the outlines of a district remain undetermined, a peculiar feeling of distrust pervades the minds of those engaged in all branches of the industry. Those who invest capital during such times incur hazards of much greater proportions than do those who invest under circumstances such as control the business of the present day. Yet, even now, a suspicion lurks around, in quarters where one would not suspect, that something of an unpleasant nature will turn up. It seems to have become apparent to nearly all parties engaged in the business that unless a new discovery of more than medium magnitude is made during the approaching spring and summer seasons, prices for production must enhance materially. But the fear of a catastrophe, in the form indicated, has caused many speculators to move much more cautiously than they otherwise would do. A torrent of disappointment has rolled down upon the trade continuously for the past five years. At the expiration of at least every three months during the time named, the careful observers had the boundaries of the prolific territory carefully established as they supposed. But just as the trade was about to bound into the realm of success (as a result of circumscribed territory) some fresh development occurred in an entirely new section, and the result was a reaction, and a season of depreciated prices. This was peculiarly the case at the opening of the Richburg or Allegany field. As related in a former issue, the trade had begun to feel the effects of "limited area" for drilling operations, when Richburg leaped into the arena,

and proposed a halt in any movement that tended upward. At this writing, the country is again enjoying a season such as that which it experienced prior to the opening of Allegany. It therefore remains for the future to determine what the result may be. In the northern region the wild-cat drill seems to have performed a most thorough work. Its boundaries have been set for more than a year, and every new test adds fresh evidence of the correctness of the theories and opinions maintained in this regard. The very latest is the test-well of Tack Bros. and others, in Elk County, which was drilled to a depth of 2,600 feet, and on tolerably low ground at that. For some time past, many eyes have been turned toward Elk County, expecting to witness the development of an oil field. Operators who have given the section attention, and have anchored an uncertain amount of money, have certainly exhibited a persistency that is at least commendable. Their efforts, however, have proved unavailing, and at the present time there are no greater indications of the discovery of an oil field than existed a year ago.

But there are other localities within the described limits of "surface indications," that have not yet been punctured by the drill, and for this reason an indescribable anxiety pervades the breast of every person interested in the advance desired, as well as in the prosperity of the country generally. There has been so many slips just as the contents of the cup of prosperity was about to be quaffed, that no body feels secure even while he imagines his eyes behold the sparkling liquid. It is therefore not to be wondered at that prices do not advance at a greater rate than they do. Were it not for the uncertainty above described, oil would be considered cheap at one dollar a barrel. Therefore, all the chances that speculators take, or hazzards they incur in purchasing the goods at present rates, are involved in the problem of the "unknown quantity" to be developed. So far as the AGE is concerned, it offers no suggestions, and makes no pretentions of knowledge greater than its readers, and therefore leaves the subject in their hands for their personal consideration.

JANUARY RETURNS.

During this month we find only 357 new wells, against 389 completed in the month previous. In drilling operations, also, there is a fair decline, which shows the tendency of the business at the present hour. In sections where only small wells are obtained, the owners of land are inclined to drill moderately. The future looks so much brighter for the business that this kind of territory is considered of greater value than it has been for several years past. For this reason there is increased inquiry for producing property. Purchasers are more numerous than they have been for the past six months, and at the same time sales are by no means of as frequent occurrence as during the early fall months. This may be accounted for on the ground of a misapprehension of facts regarding the producing capacity of the wells. Or, it may transpire through a desire on the part of the seller to make his property appear to better advantage than circumstances really admit. For these causes, those who would purchase were the properties as represented, retire to await more favorable opportunities. The prices for oil-producing property are generally based on a schedule ranging from $250.00 to $350.00 a barrel for net production. In nine cases out of ten, however, the well-owners are themselves disappointed when a three days' gauge of the receiving tank is taken. This is a very natural consequence, which arises from several causes. In the first place, when wells reach the age of one year, they become susceptible of a serious decline in daily yield. Some are effected much sooner, especially those which start off largely at the beginning. Then, in the winter season, there is a large shrinkage which it is impossible to estimate, and producers are left in the dark regarding their daily net receipts. In nearly all cases they are misled in this direction. Sometimes this results through the useless and foolish desire of employes to encourage their employers by over estimating or adding slightly to the daily returns from each well. This practice has frequently led to serious results. Producers are frequently ignorant of the true value of their assets, and make investments accordingly. The total value of oil transactions during January was estimated at $600,000, which included those of the Allegany field.

THE TRADE IN MATERIAL.

The principal part of the trade in oil-well supplies, with exception of heavy machinery, such as boilers and engines, is confined to a few firms, viz.: The Oil-Well Supply Co., L. Emery, Jr. & Co., Jarecki Manufacturing Co., at Bradford, and C. B. V. Barse, at Olean. Then as representatives of the large tubing and casing manufacturers there are S. G. Bayne, representing Morris Tasker & Co., R. E. Townsend the National Tube Works, R. F. Borckman, W. C. Allison & Co. Aside from these, J. W. Humphrey is a heavy dealer in all kinds of supplies from a set of drill-

ing tools upward to the substantial machinery, and there are many others of lesser note. Prices are maintained through a perfect understanding between the large dealers and the manufacturers. Secret meetings of these gentlemen are frequently held in the oil regions and eastern cities, simultaneously.

A schedule of rates is established in this manner, and until so ordered by another conference these prices are supposed to rule in all transactions. A few deviations by any of the members of the combination usually lead to a new conference, as the slightest change made in favor of any purchaser is generally discovered sooner or later, and in most cases sooner. On the third of the present month a conference of the character named was held in the City of New-York, at which the following schedule was adopted:

Casing, 5⅝ in. per foot,	$0.75
Tubing, 2 in. "	.22
Drive pipe, 8 in. "	2.25

Smaller pipes are in proportion, ranging from 1 inch pipe at ten cents to 1½ inch at fifteen cents.

THE COST OF A NEW WELL.

It may be of interest to many outside of the oil regions to know what the cost of sinking a well at the present time is, as compared with ten years ago. At that time the average expense of a new well was $7,000. To-day, it figures out in this manner:

MCKEAN DISTRICT.

Carpenter rig with irons, all complete,	$400
Boiler and engine,	775
Belting and connections,	125
Casing, 5⅝ in. 300 feet at 75c.	375
Delivering same at well,	20
Drilling average depth 1,625 feet at 60 cts.,	975
Tubing 1,700 feet at 22 cts.,	374
Delivering same at well,	15
Packer,	15
Tank and house to cover,	160
Torpedo,	200
Total,	$3,434

ALLEGANY.

In the Allegany field the same prices rule, with one exception—the cost of drilling. The average depth is about 1,300 feet, which would make a difference in its favor of about $200. Therefore, the cost of the initial well on any given lease of that district where new material is supplied would be about $3,200. It should be observed, however, that these figures represent the cost of the first well only. As nearly all new wells flow without the sucker rod appendage, the machinery of the first well is generally used to drill others, sometimes half a dozen, according to the desire of the owner. If he is in haste to complete the drilling of a certain area which he possesses, he may add more machinery, thereby incurring greater expense. But should he prosecute the work by the drilling of one well successively, it will be seen the first boiler and engine will serve for a number of wells. Should an accident occur at one of the producing wells while the drillers were using the material of the first, it would necessitate the expense of additional machinery, of course. But, as a rule, in the Allegany field, after properly tubing and packing the wells, they continue to flow without interruption. As the field is yet quite young, it is, of course, impossible to judge of the future action of the wells.

In the McKean district, sucker rods are coming into general use in nearly all the older sections; and in many parts the rods are applied to new wells immediately, so that to the first cost of the new well should be added the expense of a "string" measuring 1,625 feet, at 6½ cents per foot, or $105.62. This, together with valves, working barrel, etc., brings the amount up to $3,569, as follows:

First cost as above,	$3,434.00
Sucker rods,	105.62
Working barrel,	20.00
Valves,	10.00
Connecting rods, etc.,	10.00
Total,	$3,579.62

In pumping the wells, one twenty-five horse power boiler generally furnishes steam power for from four to six wells. Each well must then be supplied with an engine. In some cases where the wells are very small, requiring pumping only by "heads," that is, once a day, they are connected by a coupling system, so that one boiler and engine furnishes the motive power for the running of a score or more of wells.

FIELD COMMENTS.

The McKean district maintains a similar attitude to that of one month ago, with a very slight variation. Mention was made at that time of a well being drilled a mile in advance of operations in the Big Shanty section. Big Shanty occupies the extreme southwestern portion of the great Cole Creek belt, running through the Bingham estate and southeast corner of the Moody tract. For several years the opinion has prevailed to some extent that there were possibilities of the existence of oil far beyond the limits defined by the drill at the southwest. In accordance with this view, Bradford parties sunk two wells on this line on Kinzua Creek, but both were failures, salt water having been found in great abundance. These wells were so very close to the belt, if any exists, that faith was weakened very much in its productive qualities.

A little over a mile west of these, the P. C. L. & P. Co. (Producers' Consolidated Land and Petroleum Company) completed a dry hole during January, which makes the number of dusters of that locality about one dozen. There is yet a narrow streak—a little over half a mile in width—lying between the above-named operations which has not yet been drilled. Upon this a well is now drilling, and will probably be completed before the issue of the March number of the AGE. In the Sugar Run section a dry hole was completed by Parker and others on the Anderson tract. Near the old McIntyre Well, some distance northeast of Parker, Bradford parties contemplate the sinking of two wells immediately. At State Line, west of former operations in the State Line and Knapps' Creek division, a few wells are progressing. There are no other new features worthy of mention. Sucker rods are coming into general use throughout the field, which, of course, carries its own meaning to the oil trade.

During the month there were about twenty wells abandoned. These were located in Harrisburg, six; Rixford and vicinity, eight; Tram Hollow, six. It is stated that hundreds more await the appearance of a fresh and paying field for emigration. The AGE in a future issue will furnish a correct list of this class; a fair estimate of all the wells thus far abandoned in the district cannot be given. It is supposed, however, that the number exceed five hundred. In May, nearly two years ago, two hundred and fifty had then been abandoned, and another hundred were shut down ready for the operation.

ALLEGANY.

It is somewhat encouraging to note the decline in the volume of operations, in this field, indicated by the table of operations. The increase in the yield during January was much smaller than during the month previous, and promises to be still lighter for February. The richest portions seem to have been tolerably well drilled, which fact leads operators there to the opinion that they have nearly succeeded in elevating the daily production to its highest point. The figures elsewhere presented show an increase during the month of about 2,000 barrels per day. There were no important additions made to the producing area. On the contrary, certain portions considered favorably were proven worthless, as seen by the result of the Bryan Well, on lot 17, Wirt, and the Torry Well, on 53, in the Town of Alma. It is claimed by some, who are largely interested in this district, that the yield will reach 15,000 barrels a day. Judging from the character of the rock which produces the liquid, and the manner in which the wells start off after being torpedoed, it would appear that this was a pretty large estimate. The field seems to be so thoroughly defined, that important additions to the prolific area seem almost out of the question. And as the greater part of the drilling yet to be done must necessarily be upon the medium or small territory, it will require a large number of new wells each month to sustain the yield of the present day. Therefore, while the McKean district is undergoing the rapid depreciation now experienced, it would be unjust to argue discouragingly regarding the future of the trade. The following map shows the section of country surrounding the Allegany oil field, and will be of interest to readers in determining its location. The four corners of Bolivar, Clarksville, Genesee and Wirt constitute the section of the large deposit.

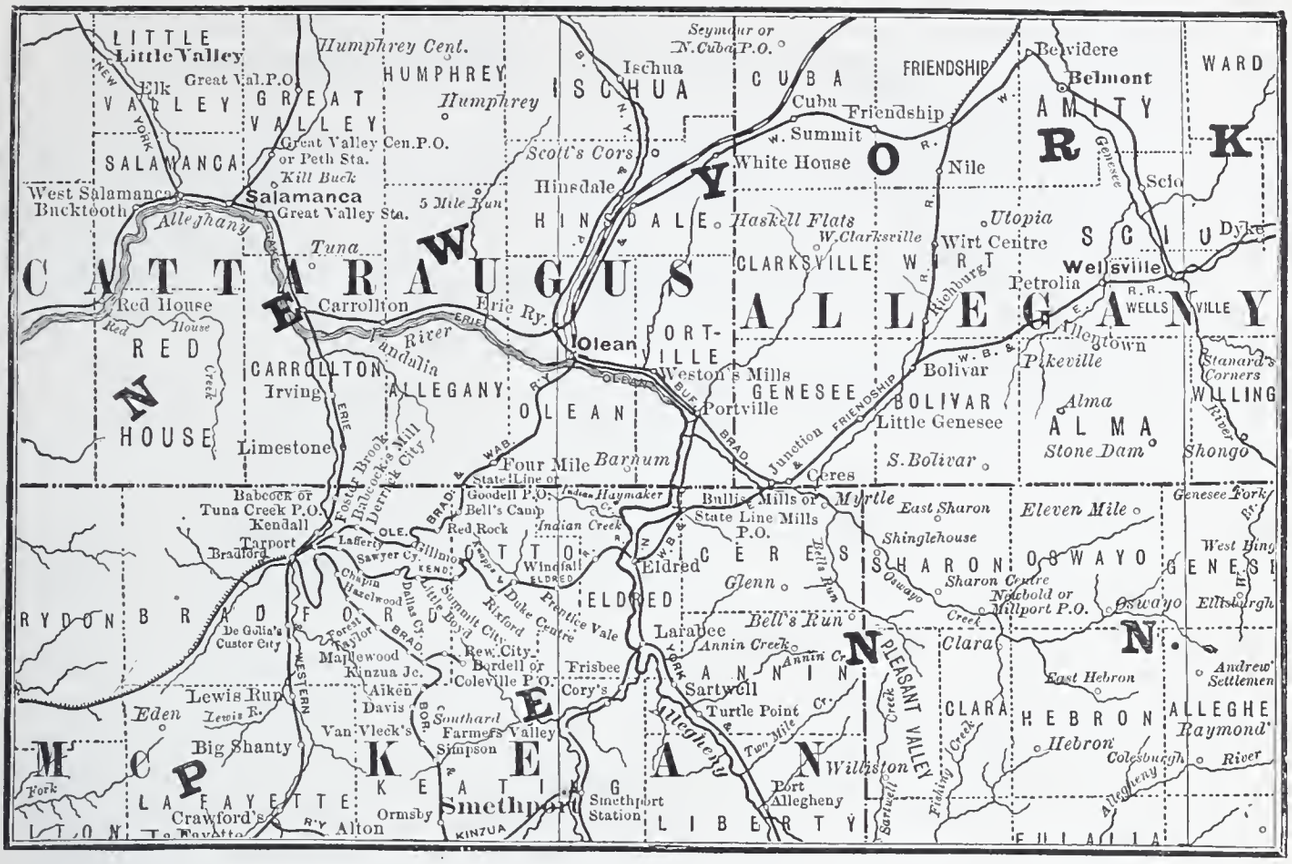
WARREN.

In the Warren field matters continue about as one month ago. An important well is drilling southwest of the Clarendon field, a few miles, on lot 646. This will determine the character of considerable territory for many years in doubt. The daily yield of the field is not increased, as the number of wells completed from month to month is small as compared with Allegany or Bradford. From twenty-five to thirty-five seems to be Warren and Forest Counties quota. The average of these is fair, though by no means such as to warrant a large increase in operations until better prices for oil are obtained. When that time arrives there is quite an extensive scope of territory that will receive attention at the hands of operators.

Therefore, as spring approaches, deprived of any unknown and important development, the outlook must be considered quite favorable to a general improvement. This, however, cannot be so extensive as some would lead the trade to believe. When oil approaches the $ mark again, operations will be renewed in many parts of the county where but little is now being done—as at Knapps' Creek, State Line, Indian Creek, and other points. Deprived of rich deposits, however, such as those of the Bingham Estate, and Moody Tract, and Richburg, it will require considerable drilling during 1882 to keep production above the point at which the consumptive demand confronts it.

SUPPLY AND DEMAND.

This interesting subject has become paramount, to the producer especially. Figures



which give him an idea of the relations which exist between the supply of the article which he produces, and the consumption of the same, are interesting reading. During the month of January a decline occurred in the total yield of the Pennsylvania region, amounting to 1,614 barrels. In the calculation, the Allegany field is included, of course. The following table exhibits the condition of stocks in that field, at the close of each of the months named:

	Stocks. Nov. 1st.	Stocks. Dec. 1st.	Stocks. Jan. 1st.	Stocks. Feb. 1st.
In wooden tanks,	38,000	84,666	180,200	270,860
In iron tanks,	108,891	142,216	169,250	241,147
Total	146,891	226,882	349,450	512,007.60

Increase, January	162,557
" December	122,568
" November	79,991

PRODUCTION CALCULATION.

United shipments, January	152,000
Additional increase of stocks, January	162,557
Add waste and fuel	15,000
Total	329,557
Daily average, January	10,660
" " December	8,937
Production, January 31st	11,123

MCKEAN DISTRICT.

The Pipe Line runs for January were as follows:

United lines	1,731,800
Tide water	198,125
Total	1,929,925
Deduct sediment	18,000
Deduct decrease of well and private stock	138,000
	156,000
Total	1,773,925
Average per day	57,723
Add Allegany	10,346
" Lower country	7,459
Total production	75,028
" " January	76,642
" decline "	1,614

With the production rapidly moving downward, as indicated by this table, toward 70,000 barrels a day, and the demand gradually moving upward toward the same point, the question of intrinsic value of a barrel of oil must shortly be settled. The export demand continues strong and active with increased openings for the use of the article. All foreign countries will this year enlarge their orders, notwithstanding spurious reports of increased developments in the sources of supply across the waters. We maintain that it is impossible for the foreign illuminating product to compete, even in old world markets, with that of Western Pennsylvania and New-York. Therefore, before the close of 1882, unless new and rich developments occur in our country, we may expect to behold a greeting between supply and demand on an equal basis.

EXPORTS OF PETROLEUM IN CRUDE EQUIVALENT FROM THE U. S.

Total from United States.	*Gallons.*
Week ending Feb. 4	10,453,436
Since January 1st	43,029,791
Same period last year	24,301,831
Increase	18,727,960

TO ADVERTISERS.

Good Reasons Why You Should Advertise In the "Petroleum Age."

IT is the only Journal wholly devoted to oil interests, and has a very large circulation.

It covers a large territory, circulating as it does in all parts of the world.

Its circulation is among a very intelligent class of the community.

Its advertising space is limited, so that advertisements, however small, are not crowded out of sight by twenty or thirty pages of other advertisements.

The greatest care is taken in having advertisements well displayed; therefore, they cannot fail to attract the eye of the reader at once.

No advertisements of patent nostrums or blind humbugs are inserted under any circumstances, or at any price whatever.

Our rates for advertising will be found to be as low as any other journal of equal circulation.

RUNS, DELIVERIES, STOCKS.

Table showing the January Pipe Line Runs and shipments, with stocks, on January 31st:

District.	Receipts, Pipe.	Barrels, Dec. 31.	Barrels, Jan. 31.
Bradford	United	1,976,504.05	1,731,800.00
Tidioute & Titus'e,	"	30,323.38	. . . . .
Lower Country	"	224,648.65	. . . . .
Warren	"	23,596.87	. . . . .
Monongahela	"	179.55	252,525.23
Total	"	2,255,252.50	1,984,325.23
Bradford	Tidewater	214,896.43	198,125.37
Warren	Union Oil Co	31,084.95	31,576.26
Titusville	Octave Oil Co.	4,522.00	4,680.66
Oil City	Charley Run	340.00	379.08
Shaffer	Shaffer Run	550.00	532.00
Franklin	Franklin Pipe	6,613.14	7,246.34
Total all Lines		2,513,259.02	2,226,864.94
Average per day December		81,083.55	71,834.35
Average per day November		75,905.33	

Deliveries.

District.	Pipe.	Barrels.	Barrels.
All Points	United	1,696,068.64	1,547,945.23
Warren	Union Oil Co.	17,909.14	13,822.33
Titusville	Octave	4,970.00	4,304.23
Franklin	Franklin Pipe	8,334.38	8,372.63
Shaffer	Shaffer Run	550.00	367.70
Oil City	Charley Run	340.00	458.05
Bradford	Tidewater	241,482.12	181,796.65
Total deliveries		1,969,654.28	1,757,066.82
Total Runs		2,513,259.02	2,226,864.94
Am't of Runs in excess Shipment,		553,604.79	469,798.12

District.	Pipe.	*Stocks Dec. 31.* Barrels.	*Stocks Jan. 31.* Barrels.
Oil City	Charley Run	3,000.00	2,844.39
Bradford	Tidewater	2,131,030.37	2,182,753.53
All Districts	United	23,087,966.20	23,481,270.73
Shaffer	Shaffer Run	25,100.09	25,203.48
Warren	Union Oil Co.	65,694.00	82,499.11
Titusville	Octave Oil Co	8,000.00	8,013.70
Franklin	Franklin Pipe	6,613.14	5,486.85
Total December		25,327,403.80	25,788.071.79
Total November		24,947,987.13	25,327,403.80
Increase December		377,416.67	Jan. 460.667.99
Average increase per day December,		12,174.73	Jan. 14,860.25
Average increase per day November,		8,353.26	. . . . .

PETROLEUM TO BE THE PHOTOMETRIC STANDARD.

A VERY important report has just been made (and accepted) by a committee appointed by the British Board of Trade to consider the question of photometric standards.

Heretofore, the means used to determine the power and density of coal gas in Great Britain was by sperm candles. As a result of the report of the committee, however, American petroleum is hereafter to constitute the basis for such calculations. The *Enquirer* states that experiments have shown that standard candles are not uniform in the quantity of light which they emit, for, in the first instance, the spermaceti employed in the manufacture of the candles is not a definite chemical substance, but a mixture of solid, fatty ethers, containing also a small quantity of oil; and, secondly, although the standard is defined in the acts of Parliament, relating to gas testing as "sperm" candles, a proportion of beeswax, varying between four and five per cent. is mixed by the manufacturers with each sample of spermaceti to prevent crystallization — owing to differences in the proportion of the natural and added constituents, small variations are found to occur in the melting point of the sperm employed in making the standard candles; thirdly, the number and size of the threads in the wick, the chemical treatment of the wick, the closeness of the plaiting of the strands, and the degree of tightness with which the wick is stretched, are conditions which affect the light of a sperm candle; yet they are all left undefined by the Acts, and in practice manufacturers differ in regard to them. The committee on careful examination and scientific tests find that American refined petroleum yields a steady, unvarying light, always of equal density according to the grade or standard of the article, and is therefore a very proper substance to occupy the position of director to all other illuminants.

HEAVY OIL.

Wells Completed.

Smith, Acme Company	3
" " "	2
" D. Grimm	2
Galloway, Hurley Smith	2
" John Bracken	1
" H. G. Sheasley	1
Fitzgerald, Allen & Co	1
McCalmont, H. F. James	1
Bleakley, W. C. Howe	1
Redman, Alges Bros	2
Wells completed	10
Production	16

Wells Drilling.

Galloway, H. G. Sheasley	rig
" J. Hurley	300
" J. Grant	200
Fitzgerald, Allen & Co.	600
Gillingham, Cane	300
" Baum	100
Snyder, Nesbitt & Co.	300
Rigs	1
Wells drilling	6
Total	7

SHIPMENTS.

Shipment of Crude and Refined reduced to Crude Equivalent out of the Producing Regions in the years named:

YEAR.	January.	February.	March.	April.	May.	June.	July.	August.	September.	October.	November.	December.	Totals.
1859											500	1,200	1,700
1860	900	1,200	2,500	4,640	11,000	21,000	58,500	64,300	79,000	78,400	63,400	38,400	423,240
1861	54,800	49,620	68,410	95,300	184,000	189,000	200,400	210,000	263,000	184,000	76,321	75,282	1,650,133
1862	98,212	93,101	103,762	201,430	256,320	385,211	375,440	376,311	401,210	406,500	213,611	190,463	3,141,521
1863	171,132	104,928	148,388	288,994	456,211	428,282	213,413	281,400	398,211	264,441	281,340	206,211	3,242,951
1864	148,324	101,431	96,486	132,486	125,218	221,386	110,490	101,218	228,430	220,386	201,441	154,765	1,842,001
1865	121,386	94,803	103,201	122,222	140,301	338,403	184,231	115,821	231,402	228,321	215,262	204,779	2,100,132
1866	132,200	121,320	180,206	260,231	280,320	390,260	200,410	290,210	390,431	318,616	210,016	236,701	3,010,921
1867	123,460	115,321	165,230	250,830	300,210	360,311	210,410	260,310	384,206	300,102	280,013	132,807	2,883,210
1868	150,220	144,201	200,410	280,430	310,408	400,046	390,402	320,210	480,306	260,240	280,260	265,377	3,482,510
1869	200,026	160,320	240,210	260,406	340,318	400,601	310,260	250,214	450,200	480,860	280,210	249,896	3,623,521
1870	360,933	312,910	354,400	390,003	407,908	418,516	410,707	516,679	542,217	557,624	519,780	444,254	5,235,931
1871	437,691	347,718	383,890	389,147	587,375	501,754	541,137	528,134	551,075	505,071	480,977	410,822	5,664,791
1872	476,966	407,606	276,220	428,512	510,417	529,228	591,238	621,954	541,607	607,468	477,940	430,786	5,899,942
1873	573,124	527,440	668,374	708,191	768,176	696,414	814,449	864,768	952,955	1,010,852	959,589	955,443	9,499,775
1874	843,663	501,220	518,246	803,409	899,027	815,413	940,281	793,865	1,014,570	543,341	546,117	602,348	8,821,500
1875	435,095	327,776	693,918	729,581	681,679	745,986	904,537	882,089	1,109,392	871,917	671,066	871,902	8,924,938
1876	677,289	519,193	623,762	603,037	646,150	921,862	1,228,530	1,203,402	1,154,549	524,190	871,496	1,190,983	10,164,443
1877	743,461	484,904	913,919	903,526	1,234,324	1,391,124	1,096,951	1,425,943	1,563,797	1,268,971	1,205,634	600,019	12,832,578
1878	775,791	774,234	741,512	846,636	960,894	1,135,119	1,330,454	1,655,651	1,434,225	1,747,390	1,281,410	992,688	13,476,000
1879	663,998	702,729	973,879	1,136,188	1,331,469	1,369,314	1,625,035	1,808,238	1,627,120	1,662,269	1,453,645	1,542,585	15,896,469
1880	1,650,409	1,395,151	1,613,371	842,268	1,095,259	975,083	1,231,611	1,304,129	1,252,635	1,665,933	1,226,030	1,335,613	15,587,447
1881	1,061,617	915,028	1,276,740	1,348,398	1,563,436	1,729,697	1,925,532	2,214,877	2,031,950	2,080,467	2,069,641	2,014,655	20,232,038
1882	1,317,973												

OIL REGION RAILROADS.

THE Buffalo, Pittsburg & Western Road is making good time on the new route from Warren to Salamanca. The new bridge over the Allegany is completed, and the road will very soon be opened for traffic from Warren to Kinzua. As soon as it is opened, the travel to Warren from Bradford will be all over that route, as it shortens the distance some thirty miles.

THE B., N. Y. & P. is a favorite route with oil region people, in their travel to and from Buffalo. The syndicate which now own this road also own nearly the entire narrow gauge system of the region, and run their trains in

THE Bradford, Bordell & Smithport Railroad is doing an increased business since the Richburg region has ceased to extend its producing area. This road still continues to declare a dividend of two per cent. per month, and has done so for a year and a half. Not a bad investment, surely.

IT is a singular fact that not an accident on the narrow gauge roads of the northern oil field has ever resulted in the death of a single passenger.

FIFTY-SEVEN passenger trains arrive and depart every day from the Union Depot at Bradford.

FATHER Cronin, of Buffalo, says a ride over the O. B. & W., or K. & E., Railroads is like traveling in Switzerland. The scenery is certainly beautiful; the hills and valleys are covered with oil wells, and add to the great natural beauty of the panorama. Both railroads are triumphs of engineering skill.

Railroading in Oildom is a great success.

STATEMENT made by the United States Pipe Lines July 10th, 1880, and enlarged to February, 1882. It gives gross stocks, sediment and surplus, net stocks, outstanding balances, receipts (or runs) from all sources, and total deliveries:

	Gross Stocks.	Sediment and Surplus.	Net Stocks.	Outstanding Acceptances.	Credit Balances.	Receipts from all Sources.	Total Deliveries.
1877—April	1,895,153.71	77,386.70	1,817,767.01	449,640.14	1,368,126.87	200,570.81	125,797.90
May	1,762,602.64	75,363 87	1,687,237.77	663,663.71	1,003,574.06	493,200.58	619,612.26
June	1,596,367.68	81,255.42	1,488,112.26	661,786.57	826,325.69	538,906.95	737,609.77
July	1,482,433.51	81,741.50	1,400,692.01	667,166.36	733,625.65	615,145.46	699,476.18
August	1,489,052.53	81,144.63	1,407,907.90	643,281.46	764,626.44	673,403.04	666,144.28
September	1,339,032.27	67,163.68	1,271,868.59	552,676.26	719,192.33	625,225.37	769,745.57
October	1,434,728.78	46,771.99	1,387,956.79	673,850.05	714,106.74	687,094.59	570,092.71
November	1,691,399.52	39,418.00	1,651,981.52	657,591.36	994,390.16	913,644.19	649,242.70
December	2,830,413.36	68,729.63	2,761,685.73	754,338.25	2,007,347.48	1,656,150.37	506,332.99
1878—January	3,124,641.15	72,453.43	3,052,187.72	864,711.41	2,187,476.31	872,681.18	715,149.78
February	3,439,526.98	82,452.66	3,357,074.32	1,404,292.13	1,952,782.19	1,030,688.44	720,478.14
March	3,940,000.65	92,963.06	3,847,037.59	1,487,430.50	2,359,598.09	1,196,251.26	701,681.27
April	4,335,274.84	133,935.76	4,201,340.08	1,615,791.19	2,585,548.89	1,137,359.40	778,050.53
May	4,609,681.45	150,117.76	4,459,563.69	2,065,333.31	2,394,230.38	1,104,352.40	843,081.33
June	4,719,699.25	181,800.03	4,537,899.22	1,950,420.81	2,587,478.41	1,092,604.02	1,004,474.55
July	4,885,851.72	229,080.78	4,656,770.94	2,078,466.56	2,578,301.38	1,258,648.45	1,108,074.33
August	4,571,658.59	217,085.19	4,354,573.40	2,064,590.75	2,289,982.64	1,195,268.67	1,496,009.04
September	4,410,061.84	225,088.86	4,184,972.88	2,705,853.95	2,479,119.03	1,182,118.57	1,318,265.33
October	4,072,267.43	234,050.89	3,838,576.54	1,517,484.27	2,321,092.27	1,271,174.73	1,564,984.43
November	4 083,972.42	216,655.30	3,867,317.12	1,784,443.35	2,082,873.77	1,159,623.71	1,129,047.42
December	4,098,200.92	201,470.30	3,896,730.62	1,741,311.07	2,155,419.55	972,338.83	924,035.93
1879—January	4,759,031.41	182,707.80	4,576,323.61	2,153,763.83	2,422,559.78	1,231,237.19	546,271.74
February	5,157,646.15	171,689.80	4,985,956.35	2,346,238.22	2,639,718.13	1,055,377.95	643,828.71
March	5,503,768.71	190,797.91	5,312,970.80	2,484,861.83	2,828,088.87	1,363,512.17	1,029,029.70
April	5,885,675.24	211,957.06	5,673,718.18	2,644,301.36	3,029,416.82	1,379,349.76	1,015,482.04
May	6,180,843.53	315,992.98	5,864,850.55	2,522,846.36	3,342,364.19	1,488,514.31	2,228,043.27
June	6,426,802.45	334,457.29	6,992,345.16	2,959,921.12	3,132,424.04	1,437,250.90	1,204,557.54
July	6,419,699.08	323,295.32	6,096,403.76	2,323,575.29	2,772,828.47	1,472,651.01	1,465,518.05
August	6,380,606.63	300,345.15	6,078,261.48	3,581,224.03	2,497,037.45	1,714.620.11	1,728,940.81
September	6,589,859.83	325,363.85	6,264,995.98	3,783,480.38	2,481,015.60	1,691,863.41	1,455,811.45
October	6,701,209.87	299,393.67	6,401,816.20	3,788,155.65	2,613,660.55	1,646,725.06	1,502,991.20
November	6,951,133.67	303,641.17	6,647,492.50	3,927,300.18	2,675,192.32	1,600,961.29	1,328,621.19
December	7,362,409.76	294,571.37	7,067,838.39	4,235,459.40	2,832,378.99	1,771,781.24	1,331,822.12
1880—January	7,735,257.38	295,517.60	7,439,739.78	4,436,788.55	3,002,951.25	1,832,963.04	1,145,194.98
February	8,187,012.49	322,568.93	7,864,443.56	4,602,286.49	3,262,157.07	1,607,663.89	1,178,111.92
March	8,621,097.49	351,130.35	8,969,967.14	4,811,894.33	3,458,072.81	1,815,133.31	1,396,037.88
April	9,662,354.59	388,558.16	9,273,766.43	5,846,536.60	3,427,259.83	1,739,297.37	723,794.73
May	10,306,078.79	454,193.73	9,851,885.06	6,361,320.05	3,490,565.01	1,552,240.91	975,061.26
June	11,266,771.77	477,431.60	10,789,340.08	7,397,131.89	3,392,208.19	1,781,937.29	848,339.08
July	12,039,010.00	475,446.56	11,563,563.44	8,125,241.25	3,438,332.19	1,890,161.44	1,095,528.25
August	12,749,623.28	462,987.28	12,286,636.00	8,635,394.80	4,651,241.20	1,904,452.70	1,177,448.42
September	13,618,276.03	382,398.71	13,236,327.32	9,287,193.94	3,949,133.38	2,075,105.26	1,115,184.71
October	14,020,877.32	391,331.55	13,629,545.84	9,448,615.77	4,180,930.07	1,999,487.98	1,598,285.06
November	14,656,891.55	341,262.67	14,315,628.88	10,038,824.08	4,231,804.80	1,859,991.50	1,064,146.39
December	15,369,758.67	361,184.83	15,008,573.48	10,913,283.49	4,095,290.35	1,987,283.54	1,207,928.35
1881—January	16,291,307.87	360,688.98	15,930,618.89	11,672,583.61	4,258,035.28	1,876,526.50	931,818.71
February	17,355,485.31	391,616.47	16,936,868.84	12,029,594.35	4,934,274.49	1,823,713.46	781,745.93
March	18,488,476.94	432,304.19	18,056,172.75	13,099,262.44	4,956,910.31	2,222,812.39	1,116,695.11
April	19,560,752.23	517,422.38	19,043,329.85	13,846,285.20	5,197,044.65	2,182,636.96	1,183,779.02
May	20,591,177.33	640,662.03	19,950,455.30	14,608,124.70	5,342,330.60	2,278,582.78	1,356,688.23
June	21,397,698.53	756,412.85	20,641,285.68	14,738,828.77	5,902,456.91	2,318,445.18	1,545,448.13
July	21,982,161.42	774,402.94	21,207,758.48	15,150,267.23	6,057,131.25	2,396,472.50	1,756,044.15
August	22,474,105.51	800,343.43	21,673,762.18	15,240,553.15	6,433,209.03	2,527,888.69	2,013,844.67
September	22,727,740.61	820,434.43	21,907,306.18	15,626,283.11	6,281,023.07	2,233,085.37	1,900,251.83
October	23,212,951.99	801,243.43	22,431,708.56	16,408,030.46	6,023,678.10	2,452,428.66	1,803,052.62
November	23,303,782.34	746,980.08	22,556,744.26	16,407,354.48	6,149,389.78	1,995,895.38	1,742,462.86
December	23,862,966.20	‖775,000.00	23,087,966.20	. . . . .	. . . . .	2,255,252.50	1,696,068.64
1882—January	24,243,382.26	762,111.53	23,481,270.73	17,788,245.97	5,693,024.76	1,984,325.23	1,547,945.23

‖ Estimated.

SOLIDIFYING PETROLEUM.—In the January number of THE AGE an account was given of a Russian process for solidifying petroleum, and the effects it might some day produce. Later intelligence goes to show that the process consists in treating with soda soap. It is stated that one and one-half per cent. of the latter is boiled with petroleum, and afterward 3 per cent. soap additional can be put in. There is no economy in packing, and the reduction in the excess of alkali would be a bother and advance the cost. THE AGE was inclined to look upon the scheme, or, as it was termed, "a great discovery," as a visionary attempt to do something great without any aim at improvement. We shall probably hear very little on the subject in future.

PETROLEUM EXPORTS FROM 1864 TO 1881, INCLUSIVE.

THE quantity of Petroleum and the quantity and value of Petroleum Products exported from the United States, during each of the fiscal years from 1864 to 1881, inclusive, as reported by the Bureau of Statistics, are as follows:

Year ended June 30.	EXPORTS.											
	Mineral, crude (including all natural oils without regard to gravity.)		Mineral, Refined or Manufactured.						Residuum (tar, pitch, and all other from which the light bodies have been distilled).		Total.	
			Naptha, benzine, gasoline, etc.		Illuminating.		Lubricating (heavy parafine, etc.).					
	Gallons.	Dollars.	Gallons.	Dollars.	Gallons.	Dollars.	Gallons.	Dollars.	Gallons.*a*	Dols.	Gallons.	Dollars.
1864 . .	9980654	3864187	438197	154191	12791518	6764411	. . .	. . .	. . . .	. . .	23210369	10782689
1865 . .	12293896	6868513	480947	173943	12722005	9520957	. . .	. . .	. . . .	. . .	25496848	16563413
1866 . .	16057943	6015921	673417	188825	34255921	18626141	. . .	. . .	. . . .	. . .	50987341	24830887
1867 . .	7344248	1865001	224576	34175	62686687	22509466	. . .	. . .	. . . .	. . .	70255511	24407642
1868 . .	10029659	1564933	1517268	167873	67909961	19977870	. . .	. . .	. . . .	. . .	79456888	21810676
1869 . .	13425566	2994404	2673094	445770	84403492	27636137	*b*134532	51122	. . . .	. . .	100636684	31127433
1870 . .	10403314	2237292	5422604	564864	97902505	29864193	*b*6871	2611	. . . .	. . .	113735294	32668960
1871 . .	9859038	1971847	7209592	746797	132608955	34138736	*b*59632	22660	155474	14770	149892691	36894810
1872 . .	13599768	2307111	8092635	932160	122539575	30566108	541419	211287	438186	41724	145211583	34058390
1873 . .	18439407	3010050	9743593	1487439	158102414	37195735	748699	277966	781074	79566	187815187	42056756
1874 . .	17776419	2099696	9737457	1038622	217220504	37560995	1244305	404244	1827798	142299	247806483	51254815
1875 . .	14718114	1406018	11758940	1141440	191551933	27030361	1173473	313656	2752848	187103	221955308	30078568
1876 . .	20520397	2220268	14780236	1442811	204814673	28755638	963442	303863	2581404	193206	243660152	32519786
1877 . .	26819202	3756729	15140183	1816682	262441844	55401132	1601065	497540	3196620	317355	309198914	61789438
1878 . .	27936727	2694018	16416621	1411812	289214541	41513676	2304624	639381	3968790	316087	339841303	46574974
1879 . .	25874488	1927207	18411044	1192229	367325823	31783575	5162835	1039124	4967000	276490	421741190	36218625
1880 . .	28297997	2180413	15054361	1258780	331586442	35999862	2487681	655468	3307038	210726	380733519	40305249
1881 . .	44690998	. . . .	20342664	. . . .	487322613	. . . .	. . .	. . .	. . . .	. . .	552356275	34343260

As a given number of gallons of refined petroleum represents the product of a larger number of gallons of crude petroleum, it is necessary to reduce the exports of petroleum to their equivalent in crude oil, in order to arrive at a knowledge of the percentage of the total product of mineral oil exported. It has been ascertained as a result of a careful computation, that the quantity of petroleum and its distilled products exported during the year ended June 30, 1878, was equivalent to 407,482,175 gallons of crude oil; or, in other words, that the exports of petroleum constituted about 66 per cent. of the production. A larger percentage of the mineral oil product of the country is exported than of any other product except cotton.

a Barrels reduced to gallons at the rate of 42 gallons to the barrel. *b* Estimated.

CRUDE OIL MARKET.

MONTHLY AND YEARLY AVERAGE PRICE OF PIPE LINE CERTIFICATES OR CRUDE OIL AT THE WELLS.

A. D.	Jan. Ave'age	Feb. Ave'age	March Ave'age	April Ave'age	May Ave'age	June Ave'age	July Ave'age	Aug. Ave'age	Sept. Ave'age	Oct. Ave'age	Nov. Ave'age	D'emb'r Ave'age	Yearly Avrges.
1859. . . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	20.00	20.00	20.00	20.00	20.00
1860. . . .	19.25	18.00	12.62½	11.00	10.00	9.50	8.62½	7.50	6.62½	5.50	3.75	2.75	9.60
1861. . . .	1.00	1.00	1.00	.62½	.50	.50	.50	.25	.20	.10	.10	.10	.49
1862. . . .	.10	.15	.22½	.50	.85	1.00	1.25	1.25	1.25	1.75	2.00	2.25	1.05
1863. . . .	2.25	2.50	2.62½	2.87½	2.87½	3.00	3.25	3.37½	3.50	3.75	3.85	3.95	3.15
1864. . . .	4.00	4.37½	5.50	6.56	6.87½	9.50	12.12½	10.12½	8.87½	7.75	10.00	11.00	9.87½
1865. . . .	8.25	7.50	6.00	6.00	7.37½	5.62½	5.12½	4.62½	6.75	8.12½	7.25	6.50	6.59
1866. . . .	4.50	4.40	3.75	3.95	4.50	3.87½	3.00	3.75	4.50	3.39	3.10	2.12½	3.74
1867. . . .	1.87½	1.85	1.75	2.07½	2.35	1.90	2.62½	3.15	3.40	3.55	2.50	1.87½	2.41
1868. . . .	1.95	2.00	2.55	2.82	3.75	4.50	5.12½	4.57½	4.00	4.12½	3.75	4.35	3.62½
1869. . . .	5.75	6.95	6.00	5.70½	5.35	4.95	5.37½	5.57½	5.50	5.50	5.80	5.12½	5.63¾
1870. . . .	4.52½	4.52½	4.45	4.22½	4.40	4.17½	3.77½	3.15	3.25	3.27½	3.22½	3.40	3.89
1871. . . .	3.82½	4.38	4.25	4.01	4.60	3.85½	4.79	4.66	4.65	4.82½	4.25	4.00	4.34
1872. . . .	4.92½	3.80	3.72½	3.52½	3.80	3.85	3.80	3.58½	3.25	3.15	3.83½	3.32½	3.64
1873. . . .	2.60	2.20	2.12½	2.30	2.47½	2.22½	2.00	1.42½	1.15	1.20	1.25	1.00	1.83
1874. . . .	1.20	1.40	1.60	1.90	1.62½	1.32½	1.02½	.95	.95	.85	.55	.61½	1.17
1875. . . .	1.03	1.52½	1.75	1.36½	1.40	1.26½	1.09	1.13	1.33	1.32½	1.44	1.55	1.35
1876. . . .	1.80	2.00	2.01	2.02¼	1.90½	2.01¾	2.24½	2.71	3.81	3.37½	3.11	3.73	2.56¼
1877. . . .	3.53¼	2.70	2.67½	2.58	2.24	1.94⅝	2.07½	2.51	2.38	2.56¾	1.91	1.80	2.42
1878. . . .	1.43	1.65¼	1.59	1.37½	1.35¼	1.14	.98¾	1.01⅜	.86½	.82½	.89⅜	1.16	1.19
1879. . . .	1.03	.98	.86¼	.78½	.76	.68⅜	.69⅞	.67⅛	.69½	.88½	1.05⅝	1.18⅛	.85⅞
1880. . . .	1.10¼	1.03⅛	.88¼	.78	.80	1.00	1.06¼	.91	.96	.96⅞	.91⅞	.91⅝	.94½
1881. . . .	.95½	.90⅜	.83⅜	.86¾	.81⅞	.81¼	.76⅞	.78⅝	93.3–16	.94¾	.83	.84	.85¾
1882. . . .	.83¼	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .

WELLS COMPLETED.

TOTAL NUMBER WELLS COMPLETED EACH MONTH IN THE YEARS NAMED.

A. D.	Jan.	Feb.	March.	April.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.	Total.
1870	131	131	114	135	164	182	161	156	135	144	112	79	1,644
1871	98	68	70	81	95	150	139	116	125	186	161	181	1,472
1872	48	118	98	122	130	98	131	117	96	101	41	101	1,201
1873	100	105	105	110	106	180	112	116	116	111	108	95	1,361
1874	108	111	108	110	112	113	124	102	108	117	112	116	1,341
1875	184	186	194	180	169	194	208	206	208	215	213	228	2,385
1876	235	236	248	207	200	258	243	274	223	270	278	271	2,945
1877	275	249	296	264	336	598	314	254	332	460	398	391	2,962
1878	279	238	202	411	468	278	210	180	176	232	241	160	3,075
1879	144	136	221	263	395	336	335	280	269	229	225	268	3,101
1880	311	238	358	494	435	315	339	359	359	360	334	309	4,211
1881	232	218	201	310	412	371	348	335	314	302	347	405	3,795
1882	357												

PETROLEUM AS A LUBRICANT.

THE following are a few of the lubricants as manufactured by different processes:

Hendricks' lubricant is prepared from whale or fish oil, white lead and petroleum. The oil and white lead are, in about equal quantities, stirred and gradually heated to between 350 deg. Fahr. and 400 deg. Fahr., then mixed with a sufficient quantity of the petroleum to reduce the mixture to the proper gravity.

Munger's preparation consists of:

Petroleum	1 gallon.
Tallow	4 ounces.
Palm oil	4 "
Plumbago	6 "
Soda	1 ounce.

These are mixed and heated to 180 deg. Fahr. for an hour or more, cooled, and after twenty-four hours well stirred together.

A somewhat similiar compound is prepared by Johnson, as follows:

	Liquid.
Petroleum (30 to 37 deg. grav.)	1 gallon.
Crude paraffine	1 ounce.
Wax (myrtle, Japan and Gamb'r,)	1½ ounces.
Bicarbonate of Soda	1 ounce.
Powdered graphite	3 to 5 ounces.

Maguire uses, for hot neck grease:

Tallow	16 pounds.
Fish	60 "
Soapstone	12 "
Plumbago	9 "
Saltpetre	2 "

The fish (whole) is steamed, macerated, and the jelly pressed through fine sieves for use with the other constituents.

Chard's preparation for heavy bearings consists of:

Petroleum (gravity 25 deg.)	12 ounces.
Caoutchouc	2 "
Sulphur	2 "
Plumbago	4 "
Beeswax	4 "

This composition is stirred and heated to 140 deg. Fahr. for about half an hour.

STOCKS HELD BY PIPE LINES.

THE following statement embraces the net stocks held by the pipe lines during the last thirteen months, and their increase from month to month, as furnished by some statistician:

	Net stocks.	Increase.
December, 1880	15,008,000	. . .
January, 1881	15,930,000	922,000
February, "	16,963,000	1,033,000
March, "	18,056,000	1,093,000
April, "	19,043,000	987,000
May, "	19,950,000	907,000
June, "	20,641,000	691,000
July, "	21,207,000	568,000
August, "	21,673,000	466,000
September, "	21,907,000	234,000
October, "	22,431,000	524,000
November, "	22,556,000	125,000
December, "	23,055,000	499,000
January, 1882	23,401,000	. . .

BUFFALO'S OIL BUSINESS.

IT is not generally know in oil circles, here in the region of supply, that in Buffalo, N. Y., there are a large number of heavy oil dealers, and that it is head-quarters for some of the largest producers of the northern district; but such is the fact, nevertheless. It is true, the industry has suffered there to some extent of late, owing to the fact that some of the large refineries have been shut down. The Solar Works, which have a capacity of 1,500 barrels a week of the refined article, have not been in operation for the past four months. The Atlas Works, which can turn out about 1,000 barrels a day of refined, when run at their full strength, have also been closed for upwards of a month. The cause is ascribed to the fact that the works are unable to compete in the market, for the manufactured article, with the Standard Oil Company. The "Niagara Oil Works," a smaller concern than either of the others, seem to be doing a successful business, and are kept moving continually. But, while in this branch of the business there is stagnation at present, in the speculative "arena" matters are tolerably lively. There are men

there who dabble in oil at the rate of 30,000 or 40,000 barrels a day. Lupher & Budd, brokers in oil and other products, handle a million barrels a month, and it is presumed that L. H. Best follows suit closely. Then there are Able & McNevin, H. J. Shuttleworth, and others, who take "flyers" of some magnitude occasionally. As a rule, these speculators are quite successful. Syndicates are sometimes formed which do not hesitate to purchase half a million barrels, and order sight drafts on certificates for the amount. Among the heavy producers who make the city their head-quarters are, Geo. H. VanVleck, H. P. Whitney, Messrs. Kittenger & Johnson, Farrar & Trefts, S. A. Wheeler, and others.

Buffalo should constitute a great money centre for the business of the northern field. It is the proper outlet for the product, and it sometimes appears strange that capitalists of that city have not paid more attention to the business of dealing in oil certificates, which are considered as safe and certain security as money-lenders could desire. As it is, however, there is much business done in Buffalo, and this will doubtless increase from month to month.

CONGLOMERATE.

THREE very important wells came in dry in the Allegany field recently. The Bryan Well, on lot 17, Wirt; the Thornton Well, on lot 58, Alma; and Elliott & Torrey Well, on lot 53, Alma.

ONE of the deepest wells ever drilled for oil purposes is the Tack Bros. Well, recently finished in Millstone Township, Elk County, Pa. It was drilled to a depth of 2,600 feet, and was dry. The sands were found regularly, and the second sand looked very encouraging, but all hopes were abandoned when the third sand was passed and no oil found.

THE Oil Well Supply Co. have added another hardware store to their large number, making twelve in all, located in the different towns of the oil regions. All these stores are supplied with everything needed on a lease, and all are connected with the central store at Bradford by telephone.

L. EMERY, Jr., & Co. have recently opened their new Richburg warehouse. It is located near the B., E. & C. Depot. It is stocked completely with all the specialties that this leading firm carry. John Owens has the command of their business in the Allegany field.

THE people of Eldred, Pa., again find consolation in the well recently finished in the suburbs of the village. A show of oil was found, and some enthusiasts claim that there are 300 feet of oil in the hole. If this is true, it may make a small well, although the chance for ever finding an oil field in the neighborhood of Eldred is very small, dry holes marking the efforts of various parties in every direction.

THE producers and Roberts, the torpedo monopolist, are once more at war. Oil producers, taken collectively, were of late supposed to have become entirely passive and indifferent to any wrongs, real or fancied, which they were supposed to labor under. The exhibition of temper lately shown by the producers of Richburg is refreshing, and leads to the conclusion that they are not all indifferent to their own interests.

THE Gibbs & Sterrett Manufacturing Co., of Corry, Pa., have discontinued the use of the electric light. The first machine put in was too small, and the last one entirely too expensive. Gas is now used instead, as it is necessary to keep the works running night and day to fill orders. Some enterprising man, with a good petroleum gas machine, should visit Corry and other points, and do some profitable missionary work.

THE Greensburg oil field is producing three barrels per day of lubricating oil, which sells at 25 cents per gallon.

THERE were 420 wells drilling on the first day of February, and 465 rigs up and building; a total of 25 less than were in operation the 1st of January.

PITTSBURGH parties are furnishing means to sink a well that was drilled, a short time ago, to the depth of 1,000 feet, in the Greensburg field, deeper, in hopes of gaining admission to some secret oil cavity. The well is located a mile west of the Scott producers.

DURING the first week of January, 1882, there were received in London, England, 65,963 barrels of petroleum, against 25,855 the same time a year ago. London is waking up.

CANADIAN refiners labor under serious disadvantages in the matter of transportation rates for their product. The freight on a car load of refined oil, consisting of fifty-six barrels, shipped from Petrolia, Ont., to St. Johns, N. B., is $105, while a car load of eighty barrels, shipped from Buffalo to that point—about the same mileage—only costs $90, the freightage thus making a difference of about two cents per gallon in favor of the American refiner. Annexation would doubtless help these Canadian oil men out. But, then, what does two cents a gallon amount to, anyhow? It goes into the coffers of the railroads, thence to country stockholders, who buy "lamp oil" as a luxury.

PRODUCTION TABLE.

SHOWING THE TOTAL YIELD OF THE PENNSYLVANIA OIL FIELD FROM SEPTEMBER, 1859, TO FEBRUARY, 1882.

Years.	Jan.	Feb.	Mar.	April.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.	Totals.
1859	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	10	15	18	28	2,173
1860	30	50	89	215	500	1,000	2,000	2,500	3,000	3,500	2,000	3,000	547,439
1861	3,201	4,041	4,800	5,400	6,000	6,100	7,100	8,500	7,000	5,150	5,514	6,716	2,119,045
1862	6,000	5,300	7,400	8,000	9,400	9,000	8,500	11,000	13,000	10,565	8,053	7,238	3,153,183
1863	6,200	6,400	7,000	5,500	6,000	7,603	7,022	8,100	9,200	7,120	9,500	10,260	2,667,542
1864	8,100	6,300	4,500	5,000	7,000	5,100	5,600	5,700	7,180	5,545	10,100	10,320	2,215,150
1865	5,900	5,800	5,000	7,500	8,000	8,000	7,400	6,350	6,400	6,800	7,600	9,350	2,560,200
1866	9,200	9,100	5,000	7,100	8,100	9,500	9,350	9,440	12,000	10,400	11,000	11,165	3,385,105
1867	10,900	8,100	9,000	10,100	10,500	9,000	10,100	10,000	10,100	7,660	9,155	8,313	3,458,113
1868	8,200	9,400	8,100	9,300	11,000	12,400	13,000	11,800	10,250	8,225	7,580	7,150	3,540,670
1869	8,100	8,500	10,000	11,000	13,000	13,000	13,560	13,000	13,500	12,500	11,200	10,625	4,186,475
1870	11,348	11,802	11,509	12,400	15,990	13,400	13,800	15,950	18,203	18,000	17,061	15,990	5,308,046
1871	13,500	13,300	13,082	12,950	13,054	13,882	14,900	15,866	15,555	15,889	15,599	15,841	5,278,072
1872	17,943	17,894	15,680	16,221	17,402	12,140	16,933	17,440	16,598	18,450	25,942	20,630	6,505,774
1873	20,550	21,460	21,830	22,260	24,632	26,361	23,406	30,900	32,500	31,343	33,584	34,680	9,849,508
1874	32,800	30,940	29,760	28,104	29,442	31,222	33,987	32,000	29,461	29,944	29,231	28,101	11,102,114
1875	27,900	26,509	26,012	23,009	23,000	23,805	24,991	23,940	23,800	23,900	23,821	23,594	8,948,749
1876	23,102	25,440	23,560	23,800	24,628	24,400	24,890	25,300	25,900	26,400	26,500	25,900	9,142,940
1877	26,930	27,560	28,860	32,069	36,000	37,440	39,210	42,100	41,321	41,200	39,900	40,120	13,230,330
1878	39,200	39,900	39,200	40,100	41,111	40,820	41,200	42,900	43,999	44,480	45,200	43,900	15,272,491
1879	44,000	43,830	47,960	50,810	52,911	55,600	56,911	59,940	61,498	60,980	58,750	58,231	19,835,903
1880	59,982	63,890	66,215	68,063	72,080	73,104	73,794	74,980	71,941	77,491	76,112	74,080	26,086,692
1881	73,030	69,060	73,900	75,245	79,000	82,460	81,900	79,100	78,231	77,971	77,892	76,642	28,136,353
1882													
Total twenty-three years to December 31st, 1881,													186,496,059

PETROLEUM GAS.

THAT petroleum would be an excellent substitute for coal in the manufacture of illuminating gas there can be no doubt. It has been shown that it contains none of the objectionable impurities common to gas coals. That for a given amount of light, as compared with coal, it occupies less than one-twelfth the space, and is, of course, more easily handled. In giving the comparative quantity of light produced from a ton of coal and from a barrel of oil, we have given the maximum in each case. In favor of the coal gas it may be fairly stated that it furnishes its own fuel in the residuum or coke, leaving also a surplus for sale. The residual coke from each ton of coal carbonized amounts to about forty bushels; of this amount, sixty per cent. (twenty-four bushels) is used for the purpose of generating the gas, the balance (sixteen bushels) is sold at an average price of ten cents per bushel. In addition may be mentioned the tar residuum, about ten gallons per ton of coal carbonized, and about the same amount of ammoniacal liquor. These last named products possess a merchantable value, and find ready sale. It would appear, at first sight, that the net proceeds from the sale of these residual products would compensate for the cost of the coal, but there are off-setting expenses to be noted. It must also be remembered that the coals used for gas purposes are not the cheaper Bituminous coals, but the rich and high-priced variety known as Cannel coals. In the manufacture of gas from coal the injurious products evolved, such as sulphureous acid, sulphuretted hydrogen, sulphurate carbon, etc., must be eliminated; and to this end expensive appliances, such as scrubbers, washers, lime purifiers, etc., are necessary and indispensable. These appliances are very expensive, occupy large space, and require much labor and attention. In order to avoid as much as possible all dry and uninteresting detail, and, in the meantime, to give coal its very best showing, we will grant that the residual products compensate for the cost of appliances and labor not necessary in the manufacture of oil gas. Granting all this, the superior advantages possessed by petroleum are such as to give it a very decided preference over coal for gas purposes. To make the subject easy of comprehension, let us suppose a town of, say, 10,000 inhabitants, requiring a daily supply of gas for illuminating purposes, equal to 50,000 cubic feet of coal gas. If coal be the product used, it will require a capacity for manufacture and distribution equal to 65,000 cubic feet at least. This will include, firstly, two benches of six retorts each, or twelve retorts in all. Each retort will be charged once in four hours with 200 pounds of coal, or 1,200 pounds for each retort for

twenty-four hours, and for twelve retorts, 14,400 pounds, or say six and one-half tons. A pound of good coal will yield four and one-half cubic feet of gas; therefore, 14,400 will yield 64,800 cubic feet.

Six and one-half tons gas coal, at $6.00, . . $39.00
Four men, at $2.00 each, per day, ... 8.00—$47.00

In order to meet this demand, it is now proposed to substitute petroleum for coal; let it be remembered that petroleum gas is five times as rich in illuminating properties as coal gas, and therefore, only one-fifth the volume is required, or say 10,000 cubic feet daily. To meet this want one bench of three retorts is necessary. Each retort will carbonize one barrel (forty-two gallons) per day and yield 4,000 cubic feet of gas, or 12,000 feet from one bench of three retorts.

Three barrels petroleum, at $1.50 per bbl., . . $4.50
Two men at $2.00 each, ... 4.00—$8.50

The disparity seems so great in this showing or comparison, as to appear altogether incredulous; and, doubtless, it would be more readily accepted and appreciated could we, by any fair means, show less astonishing results in favor of petroleum gas. The great item of saving is, of course, noticeable in the comparative cost of the crude products, coal and oil. If it could be shown that petroleum commanded a price equal to $13 per barrel, then, indeed, the surprising difference could be obviated, and reasonably stated. It is not pretended that the foregoing statement embraces more than the principal items of cost in the actual production. There are, of course, many items of expense entering into the manufacture of illuminating gas, especially in the case of coal gas; but for the purpose of showing the relative merits of coal and oil for gas it is not necessary to enter into the details here. It may be, however, confidently asserted that a general comparison of cost and expense, from beginning to end, bear about the same, or approximately the same, relation. The average reader, and particularly the average "oil man," reading the foregoing statements, and fully realizing the astonishing disparity, will doubtless indulge a smile of incredulity, and good-naturedly compassionate us upon our too fervid imagination; but to those who have given this subject a careful investigation, the results will appear intelligible and satisfactory. But, it will be argued, if such astonishing results in favor of petroleum are possible, and have been or can be demonstrated, why has not petroleum long since taken the place of coal in gas manufacture? Ah! this is altogether another enquiry, and opens a vast field for speculative thought, and upon which we are not now disposed to enter. In passing, however, it might be a seasonable question to retort: What efforts have those of us most interested made to bring about the desired results? What would probably have been the condition of the Anthracite Coal business but for the interested efforts of its advocates in forcing it into various uses? The statement is volunteered that with a slight attempt at the effort made by the Anthracite Coal men our petroleum would to-day command a price commensurate with its true worth, both as a liquid and gaseous illuminant. We repeat a statement made in our first number that, with an exception or two, no thought has been given to this important question by the producers of oil. It must not be forgotten that those most interested in enlarging the demand for any crude or manufactured article of commerce are supposed to be, and of right should be, best acquainted with its properties and proper uses. In order to attract the attention of the public, and interest the people, even in matters affecting their comfort and convenience, it must first be shown that such results are attainable. It is not entirely within the province of the public to experiment, analyze, and satisfactorily demonstrate the practicability of the question. They are generally satisfied to accept the situation as it is, and are proverbially slow to changes of any kind. A thousand and one instances of the truth of this fact might be adduced, but as the premises are so positive, references are unnecessary. Observe how industriously the gas manufacturers are laboring to introduce their product to heating, for domestic purposes, or, if you please, how tirelessly the Standard monopoly bends its best efforts to the utilizing every particle of the refined residuum. The producers of petroleum stand forth a conspicuous example of the folly of reckless disregard and positive indifference to the plainest and most urgent of business principles. The distressing fact is not lost sight of that we have been ground down to poverty and almost despair, and that the defeats of the past have almost completely discouraged us; still hope may beget energy sufficient to spur us in the direction of opening up new uses for our product, and thus, in time, render our final victory all the more enduring. It is not the first time in our experience that we have tried to attract the attention of the producers to this important question. We fully appreciate the kindly feeling had, and frequently evinced, for those of us who try, however vainly, to reanimate the drooping spirits of an oppressed community; but we will forego the sentiment and kindly feeling, if we can, by repeated efforts, convince them of the importance and entire practicability of the methods to be more fully explained, as opportunity offers, in the near future.

M. H. B.

A NEW OIL BASIN.

IN Wyoming County, this State, ever since oil was first discovered, the citizens have prayed and sighed, and actually worked, which is quite unusual, for the development of an oil field. Geologists have encouraged them with the same zeal that characterized the discouragements of operators who were trying to develop the McKean and Allegany fields. In the early struggles in McKean County to ascertain the exact outline of the oil deposit, these scientific theorists hooted the idea of there being an oil formation of any merit in the latitude. They averred similarly regarding Allegany County, N. Y., and how closely they guessed is to be seen by results. Now we are informed, through the same channel, that the great Sho Shone basin of Wyoming County should produce 12,000 barrels of oil daily. If they strike the spike as closely in this instance as in nailing Bradford and Allegany, then we may look out for some gas blowers in "Sho Shone." The market bulls should not become seriously alarmed over the Sho Shone basin or dipper just yet. Wyoming County may have an oil deposit, but if so it will be a monstrosity, and sometimes such things occur in Nature, but not often, especially in the work of *erecting* the rocks. It would appear from the general "lay of the land" that the county lay somewhat east of the great oil "track" or "girdle," and is therefore void of the precious mineral. However, we await the result of the tests now making with some degree of interest. There are two wells about completed; one is located near Honesdale and the other near Mahoopany. The first is supposed to be a failure while the second is yet drilling below the point at which oil should be expected.

A BIG FIRE.

A FIRE, caused by a spark from a passing locomotive attached to a freight train, on the B., N. Y. & P. R. R., on Sunday, the 12th inst., destroyed three large iron tanks belonging to the United Pipe Line Co. These tanks were of 35,000 barrels capacity each, and were full of oil. A general average assessment will be made upon the patrons of the line who had oil in its possession at the time of the destruction.

THE Standard Oil Company is said to be capable of manufacturing all the oil produced, having facilities exceeding the production largely.

PETROLEUM yields 77 per cent. of merchantable products. No other commodity except cotton yields an equal percentage from the raw material.

PETROLEUM EXPORTED.

TABLE FURNISHED BY LORIN BLODGET, ESQ.

Fiscal Years.	Mineral Crude.		Do. Refined Naptha.	
	Gals.		Gals.	
1878–'79 . .	25,874,488	$2,180,413	15,054,361	$1,258,780
1879–'80 . .	28,297,997	1,927,207	18,411,044	1,192,229
1880–'81 . .	39,984,844	3,065,464	17,292,310	1,693,975

Fiscal Years.	Illuminating.		Lubricating.	
	Gals.		Gals.	
1878–'79 . .	331,586,442	$35,999,862	2,487,681	$655,468
1879–'80 . .	367,325,823	31,783,575	5,162,835	1,039,124
1880–'81 . .	332,282,945	34,317,682	4,852,203	1,054,064

Fiscal Years.	Residuum.		Total.	
	Barrels. / Gals.		Gals.	
1878–'79 .	78,739 / 3,207,030	$210,726	378,210,010	$40,215,249
1879–'80 .	113,500 / 4,767,000	276,490	423,964,699	36,218,625
1880–'81 .	77,330 / 3,247,860	184,411	397,660,162	40,315,496

"MOLLY MAGUIRES FROM THE OIL REGIONS."

About the middle of February, in speaking of troubles that had arisen in Steuben County, N.Y., regarding resistance by outlaws to the collection of taxes which had been levied for uses contrary to the wishes of the laboring classes, an Albany, N. Y., paper said the parties resisting the process of law were about two hundred and fifty in number, and were composed of "Molly Maguires from the Oil Regions." Now, it is absolutely incomprehensible how an editor, possessed of sufficient brains to write even the simplest paragraph, could be guilty of such a flagrant and inexcusable error. In all the world there could not be found a people more desirous of "peace in the community" and more violently opposed to any movement that would even seem to be opposed to the strict maintenance of "law and order." During all the years of what the masses in the Oil Regions considered the severest oppression, by forces that seemed combined for that purpose, not a violent word was uttered, except in rare cases, and then it was quickly choked down the air passage whence it came. In the very hottest part of the contest between the people and the combined corporations, the most that was ever done on the part of the former, was to meet and "resolute" to apply the power of the law in their behalf. Public meetings were frequently held, where thousands gathered, and the most violent speeches, denunciatory of the combinations, were made, but not with a view to the violation of law in order to obtain redress. No intelligent citizen ever thought of such a thing. And yet there are editors (?) only a step from the seat of production who are so ignorant of facts as to announce the presence of "two hundred and fifty Molly Maguires from the Oil Regions."

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The New-York, Lake ERIE & Western Railroad.

BUFFALO & SOUTH-WESTERN DIVISION.

LOCAL TIME TABLE.

	(10)	Daily (4)	Daily (2)	STATIONS.	Mls	Daily (1)	Daily (3)	(11)
	P. M.	P. M.	A. M.			A. M.	P. M.	A. M.
		6.50	10.20	Ar...BUFFALO..Lv.	0	8.10	4.45	
	4.17		9.58	Lv.Limest'ne R'ge "	4		5.06	8.43
	3.57		9.47	" ... Big Tree... "	8		5.16	8.48
	3.50		9.44	" Abbott's Road "	10		5.20	8.55
	3.33	6.14	9.35	" .. Hamburgh.. "	12	8.48	5.28	9.35
	3.30		9.33	" .Water Valley. "	13		5.30	9.40
	3.15		9.26	" . Eden Valley. "	16		5.36	9.53
	3.03	6.02	9.20	" . Eden Center . "	18	9.00	5.43	10.05
	2.40	5.53	9.09	" .North Collins. "	22	9.09	5.53	10.30
	2.18		8.57	" ....Lawtons... "	26		6.04	10.53
	2.00	5.37	8.49	" .... Collins. .. "	29	9.24	6.12	11.10
	1.45	5.30	8.40	" ...Gowanda .. "	32	9.30	6.20	12.00
	12.45	5.15	8.25	Lv.....Dayton... Ar.	37	9.45	6.35	12.30
	12.30	5.10	8.23	Ar.....Dayton ...Lv.	37	9.55	7.03	1.00
	12.15	5.02	8.19	Lv....Markhams.. "	39	10.00	7.08	1.12
	11.45	4.53	8.11	" ..Pine Valley.. "	42	10.08	7.17	1.32
	11.05	4.40	8.00	" .Cherry Creek. "	47	10.20	7.29	2.02
	10.30	4.29	7.51	" ..Conewango.. "	51	10.30	7.39	2.20
	9.38	4.08	7.34	" ....Kennedy... "	59	10.48	7.58	3.16
	9.00	3.53	7.22	" D.A.V.&P.Cr'g "	65	11.02	8.13	3.53
	8.30	3.45	7.15	Lv.JAMESTO'N..Ar.	68	11.10	8.20	4.15
	A. M.	P. M.	A. M.			A. M.	P. M.	P. M.

Trains No. 1 and 4 stop at all stations on Sunday.

THROUGH CONNECTIONS FOR THE WEST.

(4)	(2)	STATIONS.	(1)	(3)
	2.50 P. M.	Ar.....BOSTON Lv		3.00 P. M.
11.25 A. M.	7.25 A. M.	" .....New-York .... "	5.45 P. M.	6.45 "
3.47 "	11.00 P.M.	" .... Binghamton..... "	1.21 A. M.	3.35 A. M.
2.03 "	8.55 "	" .....Elmira ..... "	3.07 "	5.35 "
9.25 P. M.	1.03 "	" .... Niagara Falls .... "	4.35 "	2.15 P. M.
6.50 P. M.	10.20 A. M.	Ar.. ..BUFFALO Lv	8.10 A. M.	4.45 P. M.
3.45 P. M.	7.15 A. M.	Lv... JAMESTOWN....Ar	11.10 A. M.	8.20 P. M.
1.03 "	5.20 "	" ..... Corry ..... "	12.55 P. M.	8.55 "
11.40 A. M.	3.55 "	" ..... Meadville ..... "	2.20 "	10.40 "
10.25 "	2.40 "	" .....Greenville..... "	3.36 "	3.44 A. M.
9.10 "	1.08 "	" ..... Warren ..... "	4.44 "	4.54 "
7.10 "	10.45 P. M.	" ..... Cleveland..... "	7.00 "	6 50 "
8.17 "	12.08 A. M.	" .....Ravenna..... "	5.42 "	5.47 "
8.05 "	11.55 P. M.	" .....Kent..... "	5 55 "	6.00 "
7.24 "	11.20 "	" .....Akron..... "	6.38 "	6.30 "
4.44 "	8.25 "	" ..... Mansfield ..... "	9.10 "	9.30 "
4.05 "	7.40 "	" .....Galion.. ..... "	10.00 "	10.10 "
3.13 "	6.48 "	" .....Marion..... "	11.02 "	11.02 "
1.18 "	4.50 "	" .....Urbana..... "	1.18 "	1.00 P. M.
12.46 "	4.04 "	" .....Springfield..... "	2.15 "	1.50 "
11.50 P. M.	3.10 "	" .....Dayton..... "	3.30 "	2.50 "
9.20 "	12.40 "	" .....Cincinnati..... "	6.00 "	5.30 "
.....	8.30 A. M.	"ChicagoP.Ft.W.&C.Ry "	.....	8.20 "
7.50 A. M.	6.50 P. M.	" .....St. Louis. ..... "	7.10 P. M.	7.05 A. M.
6.25 P. M.	6.47 A. M.	" ....Kansas City..... "	8.45 A. M.	8.30 P. M.
5.10 P. M.	7.30 A. M.	Lv..... OMAHA.....Ar.	10.00 A. M.	7.35 P. M.

Train No. 1 arrives at Titusville 1.30 P. M., Oil City 3.40 P. M.

BRADFORD BRANCH.

12)	(22)	(6)	D'ly. (20)	STATIONS.	Mls	(15)	(23)	(9)	D'ly (21)
P.M.	P.M.	A.M.	A.M.	Ar.] [Lv.		A. M.	A. M.	P.M.	P.M.
3.20	4.01	8.30	6.55	" .CARROLLTON. "	0	9.20	11.04	4.10	8.22
2.59	3.44	8.06	6.39	" ....Limestone. .. "	6	9.43	11.20	4.35	8.42
2.52	.....	7.58	6.31	" ... .Babcock .... "	8	9.50	.....	4.41	8.50
2.45	3.34	7.50	6.26	" .....Kendall..... "	10	9.58	11.31	4.48	8.57
2.40	3.30	7.45	6.20	Lv...BRADFORD..Ar.	11	10.03	11.35	4.51	9.00
1.45	.....	7.35	.....	Ar...BRADFORD..Lv.	11	10.45	1.20	4.55	....
1.35	.....	7.25	.....	" ....DeGolia's....Ar.	14	11.05	1.30	5.03	....
1.30	.....	7.18	.....	" ...Custer City... "	15½	11.10	1.35	5.07	....
P.M.	.....	6.30	.....	Lv. .BUTTSVILLE. "	26½	12.25	2.05	5.45	....
.....	.....	.....	.....	.....	....	.....	.....	.....	.....

EXTRA TRAIN leaves Buttsville at 8.40 A. M., Bradford 10.03 A. M., arriving at Carrollton 10.45 A. M., *Daily.*
EXTRA TRAIN leaves Buttsville at 1.10 P. M., Bradford 2.15 P. M., arriving at Carrollton at 4.55 P. M.
EXTRA TRAIN leaves Carrollton 11.50 A. M., arriving at Bradford 12.35 P. M. Custer City 1.20 P. M.
SUNDAY SPECIAL TRAINS leave Carrollton at 12.15 and 5.05 P. M., arriving at Bradford at 1.00 and 5.54 P. M.
Train No. 12 runs daily between Bradford and Carrollton.

TRAINS BETWEEN BUFFALO AND BRADFORD.

	(4)	Daily (2)	Mls	STATIONS.	Mls	Daily (1)	Daily (3)	
	P. M.	A. M.				A. M.	P. M.	
	6.50	10.20	78	Ar.... BUFFALO....Lv.	0	8.10	4.45	
	6.14	9.35	66	Lv.....Hamburgh .... "	12	8.48	5.28	
	5.37	8.49	49	" .....Collins..... "	29	9.24	6.12	
	5.30	8.40	46	" .....Gowanda ..... "	32	9.30	6.20	
	5.15	8.25	41	" ..... Dayton ..... "	37	9.45	6.35	
	5.09	8.08	41	Ar.....Dayton..... Lv.	37	9.55	7.03	
	4.35	7.30	25	Lv....Little Valley...Ar.	53	10.31	7.46	
	4.15	7.10	17	" .....Salamanca ... "	61	10.55	8.07	
	4.03	6.57	11	" .....Carrollton..... "	67	11.04	8.22	
	3.44	6.39	5	" .....Limestone..... "	73	11.20	8.42	
		6.31	3	" .....Babcock..... "	75		8.50	
	3.34	6.26	1	" ..... Kendall..... "	77	11.31	8.57	
	3.30	6.20	0	Lv....BRADFORD...Ar.	78	11.35	9.00	
	P. M.	A. M.				A. M.	P. M.	

Train No. 1 arrives at Bradford *on Sunday* at 1.00 P. M.

REMEMBER, THAT BETWEEN BUFFALO AND BRADFORD THERE IS NO CHANCE OF CARS!

THE PETROLEUM AGE.

VOL. I. BRADFORD, PA., MARCH, 1882. NO. 4.

PETROLEUM.

CHAPTER IV.

From 1862 to 1864—Progress of Operations—Speculations in Oil—Modes of Transportation—Table of Operations.

DURING the year 1862 petroleum was first introduced into Europe, and to Mr. J. T. Briggs, it is said, belonged the credit of having the attention of foreigners called to the article. Mr. Briggs was a successful operator on the Foster Farm, just above Petroleum Centre. The oil sent was from the Buckeye Well on the Espy Farm, adjoining the Foster Farm on the south. The sample was analyzed in London with great care, and the result was that 255,000 barrels, of 43 gallons each, crossed the waters during the year. At that time, and up to the year 1872, a barrel of oil consisted of 43 gallons. Since then it has been calculated on a basis of 42 gallons.

The winter and fall of 1862–'63 witnessed a rather dull and uncomfortable season for the conduct of business. The hotels throughout the country were filled with speculators and others, who seemed to be awaiting the return of spring for a renewal of the life and activity witnessed during the season previous. They seemed to have an idea that it was necessary to sow in spring in order to reap during the summer. This gave the oil-stock jobber a fine field for labor. It was an easy matter to dispose of any piece of property that in any way resembled oil territory. At Titusville, the old Moore House, the Exchange Hotel, the Merchants' Hotel, and the McCray House, were the principal head centres for the oil men. The town was at this time rapidly rising. It had been formerly nothing but a small country village, where raftsmen on Oil Creek used to make head-quarters during the tide months. Now it was the scene of the greatest life. Aside from the hundreds of capitalists who made it the pivot from which they revolved, there were hosts of the laboring classes, teamsters especially, who also made the place head-quarters. Boarding-houses multiplied, and all kinds of business enterprises flourished at a most cheering pace. Titusville, therefore, in the three years from the striking of the Drake Well, lost no time in becoming the metropolis of the Pennsylvania Oil Regions. It had already gained a population of 2,000 souls, and people were tumbling over each other to find choice selections upon which to erect buildings.

Moreover, in Titusville perhaps more than any other town of Oildom at this time, the projectors of stock companies found a rich field in which to ply their callings. To some who have never had the pleasure of observing the workings of these stock affairs it might be a pleasure to read something regarding them. Of course, no two exactly agreed in detail, but on general principles they were all very similar. The mode was about as follows: Mr. A. B. secured, by refusal or otherwise, a certain tract of land. It was located on Oil Creek or contiguous territory. A diagram of the land was at once made, showing the ravines and other interesting localities where oil would probably be found. The greater the number of streams or ravines, the greater the value of the territory. A. B. agrees with the original owner to pay him a nominal sum — say, $5,000 for a farm of 100 acres. He pays one dollar spot cash, and gets good time on the balance. He estimates a daily production of oil from the farm of several thousand barrels, to continue indefinitely. Therefore his opinion of profits, when conversing on the subject with those whom he desires to *rope* into purchasing an interest, is very exalted, as any one can see. He has concluded to organize a stock company. He gives it a big title, "The Great Central Land & Petroleum Co.," "The New-York, Boston & San Francisco Oil Co.," "The Oil Creek & Gordon Run Petroleum Co.," "The Pithole Creek & Universal Salvation Co.," etc., etc. Either one of these satisfies him. He rushes off to the nearest printing-office, and has a bundle of certificates of stock struck off. These are printed in the highest and most brilliant style, equalling or even excelling the efforts of the bond-makers of Uncle Sam in this direction. These certificates are usually eight or ten inches in length from east to west, and from four to six inches the other way. The title of the company comes first as the heading, "The Imperial Gulltown Developing Mining and Petroleum Co.," 1,000,000 shares of the par value of $1.00 per share; 25,000 shares are set aside as working capital. A. B. is president, and B. A. is secretary, and Mr. A. B. is treasurer, and his oldest son comes in as superintendent. These certificates are offered for sale, and, strange as it may appear, are rapidly absorbed by a greedy public. Mr.

A. B. goes forth with his million dollars and proceeds to develop his farm, after, of course, paying to the owner the paltry $5,000 agreed upon. This is one instance, and there were thousands just like it, and some of them much more inflated. In one case the writer hereof paid $1,000 for one-sixteenth of the Henderson Farm, near Tidioute, Pa., afterwards purchased and operated by E. E. Clapp, Esq. It was represented by the party, to whom the $1,000 were paid, that the farm was to cost $16,000. But when the writer received his "deed" for his interest, it was nothing more or less than one of those beautiful pictures in the form of a certificate for 12,500 shares of stock in the "Oil Creek & Gordon Run Petroleum Co.," whose capital was represented by 500,000 shares, at one dollar a share. This represented a one-fortieth interest instead of the one-sixteenth agreed upon when the money was paid over to make the original purchase of the farm. The fact of the swindle did not dawn upon the mind of the victim for six months after the reception of the handsome document. This was placed where it was certain to escape the ravages of fire, or the manipulations of the fellow who might desire to surreptitiously remove it. The reader can therefore judge of the extent to which this business was conducted, when nearly every farm in the whole Oil Country was purchased and stocked in a similar manner. Eastern cities became the centres for the sale of this *stuff*, and millions upon millions of dollars were invested in this manner, the seller or originator in most cases, only, realizing any gain from the transaction. But this business did not reach its acme until 1864 and 1865, just prior to the close of the war. At that time there *was* activity, and there *was* much money afloat. The subject will come up for consideration at the proper time.

In January of 1863, the crude oil market on the creek was about $2.25 a barrel, which was considered a fair price when compared with the figures that ruled during nearly the whole of the previous year. With the opening of spring came renewed activity in all parts of the country, especially "on the creek." During the month of January, the famous Noble Well was struck, near the village, and poured out liquid wealth at the rate of 3,000 barrels a day. It was located on the Farrel Farm, and was the wonder of the times. It was the cause of more dry holes being sunk in various parts of the country, and also of more *blind* speculations, than any other event of the period. It seemed that there was no such thing as exhausting the resources of this remarkable well, and it continued to produce at an enormous rate, month in and month out, for nearly two years, when it finally subsided, and faded rapidly from view. It is said by some of the owners that the well yielded nearly four million dollars' worth of oil, and its first cost was only $4,000. It required but a moment's notice of the gushings of this well, which seemed to be from the eternal depths, to cause the most sedate to become moved to excitement. It seemed quite an easy matter, even in those early days, to sink wells, though perhaps there were ten abandoned, with stuck tools, to every one of the present day, 1882. A very peculiar accident occurred at this well in the spring of 1863. Messrs. Noble & Delemater, owners of the well, erected a large building, a part of which they expected to occupy as an office. Their bookkeeper, James Bonner, Jr.; son of an Episcopal clergyman, of Ashtabula, Ohio, removed to it. He was visited by his parents, who had heard of his suffering from an attack of fever. While they were with him, the building took fire and was destroyed. The young man was carried to a window by his father, where, through the aid of workmen close by, he was removed to safe quarters, but died soon afterwards. The father crawled through the window and fell on the ground outside, exhausted and suffocated by the heat and smoke. He was rescued with great difficulty, and survived. The mother narrowly escaped death by jumping through a window of another part of the house. Thus, while there were many instances of supreme pleasure and delight in which the oil fraternity engaged, there were others of a distressing character that had a tendency to bestow a reputation upon the Oil Country by no means flattering or encouraging to those who were about to pay it a visit. Perhaps the saddest on record is given by an eyewitness of the burning of the well near Rouseville, and the awful results attending. The account is as follows:

The fire occurred in the summer of 1881. Mr. J. R. Rouse, of Rouseville, Pa., a very excellent citizen, in company with other parties, drilled a well on the J. Buchannon Farm, on Cherry Run, near the village above named. One day in the month mentioned, while the workmen "off turn" were taking their mid-day refreshment, the sounds of hurrahing were heard. On looking out, the drillers of the Rouse Well were seen standing a short distance from the well, hats in hand, giving vent to their feelings, which had become considerably elevated by frequent

shouts and waiving of their thoroughly saturated head-gear. This was the first flowing well obtained in that neighborhood, and, of course, it attracted all the people surrounding. It was a great sight. The oil was blown far above the derrick, and the gas hissed and puffed and blowed at a terrible rate; so much so, in fact, that it was thought the entire string of tools would be thrown high in the air. The oil began to cover the entire surface of the ground, and the neighbors set themselves at work to cast up breast-works, in order to save the liquid from spreading over the whole valley. There was no tank, and, of course, no means of saving the liquid. Mr. Rouse perceived that there was danger of the gas igniting while fire was allowed to burn in the fire-box of the boiler, and started, in company with a workman, to have it extinguished. He had not reached the boiler, when a terrific explosion occurred. The gas had preceded him. Being enveloped in the mist, he was shockingly burned, but survived a couple of days in awful agony, and died. He was not the only one who there met his fate. On the contrary, it is estimated that more than a score died, sooner or later, of injuries there received. Not being posted as to the danger, those who had gathered to witness the scene, together with those who were at work digging a trench, had approached too near the well, and when the explosion took place, were enveloped in oil, which had filled the air in the form of spray. The shouts of rejoicing at the striking of the gusher were turned into shrieks of anguish and the cry of mourners. It was an awful day at Rouseville.

As nearly all the farms along the valley of Oil Creek were by this time operated to some extent, and the daily yield of oil was beginning to increase rapidly, which was occasioned by the striking of so many large flowing wells, the transportation of the product to market became in itself an important branch of the trade. Aside from the 1001 teams which waded through mud and slush, such as few men living could imagine, there were used barrel rafts and flat-boats. The flat-boats were usually hauled up stream by four horses. These poor animals were forced to wade through the cold water of the Creek, which in the early spring months were covered with slush, ice and oil. About one year of such life generally brought the most powerful of the equine tribe on to his back in the bone-yard. Coal, for fuel purposes, was usually brought up from Pittsburg in these boats, and they were returned full of oil, which was exposed to the elements, there being no covering to the *scow*. When flat-boats became scarce, or the water in the creek too low for flat-boat uses, rafts, composed of the barrels filled with oil, were made. These were tied by ropes, and held till there arrived what was termed a "pond freshet," when they were cut loose, and permitted to rush with the current to the Allegany River, at Oil City. Upon these freshets were sometimes seen hundreds of flat-boats and numerous barrel rafts, all rolling and tumbling over ripples, and sometimes over each other, in the mad rush of the waters. Thousands of barrels of the precious stuff were lost. The smaller boats were run over and sunk by the larger ones; the weaker were smashed to splinters by the stronger, and, to cap all, down would come a raft of barrels rolling and tumbling over all, forming a singular and exceedingly strange spectacle, and one, which when once seen, cannot be easily forgotten.

The reader can therefore form some idea of the inconveniences encountered in the transportation of oil to market in the early days. When contrasted with the present facilities, the improvements in this direction seem even greater than in any other branch of the trade. At that time there were but few refineries in the country. One was located at Erie, Pa., one at Rome, N. Y., two at Pittsburgh, and two at Cleveland. There were others, however, in some of the eastern cities, where what was termed "coal oil" was manufactured from the cannel-coals of the country. These were quickly converted to petroleum uses, and in a very short time the country swarmed with small refineries. The crude had therefore to be taken to Oil City and Pittsburgh at the south, and Corry and Union at the north, for shipment east by rail. The distance from Oil City to the wells above Petroleum Centre was just 11 miles. As a rule, each purchaser had his stopping place at certain farms and wells all along this route where he loaded his flat-boat in the season. The oil business in those days was conducted on the honorable plan. There was more trust then than there ever was later. Every man engaged in the oil trade was considered all "O. K.," and it was no unusual thing to witness the departure of thousands of barrels of oil in barges and otherwise, to be paid for on return from market of the purchaser. The buyer took the oil, and overcame the vicissitudes of the journey, 80 miles down the Allegheny, as best he could, sold the stuff, paid his assistants, and returned to remunerate the producer according to contract. In no instance, except in extreme cases, where accidents befell the shipper, was a

"lay down" ever known, and even in the case of accident, as aforesaid, the shipper made it a point to return and make good the account at the earliest opportunity.

At the mouth of Oil Creek a town began to spring up immediately after the opening of the oil development. There had existed a small settlement there for a period of about thirty years previously. There was a grist-mill, a saw-mill, an iron furnace, a store, a hotel and a boat landing. The greater part of the country along the banks of the Allegheny all the way to Pittsburgh south, and as far north as the Allegheny River drained, was a solid wilderness, the hills being covered principally with pine and hemlock. Of course, back from the river some distance there were settlements, but the rocky, wooded hill-sides which skirted the river presented a wild and picturesque scene. Before the slaughter of these tall pine and hemlock forests it is said the yearly average depth of water in the river was much greater than it ever was afterwards. Along these lovely banks "sailed" many a rudely-constructed craft and many a raft of timber and lumber for southern markets, while the howl of wolves, the unpleasant whine of wild cats, and the yelp of jackals resounded from the forests and re-echoed from the rugged hills. All this seems like a dream when viewed in the light of later years. It would seem as if it had been left for petroleum to act the part of the great civilizer of peoples, not only in the region in which it was discovered, but also in all the nations of the earth. It has, perhaps, done more to call the attention of uncivilized, as well as civilized, nations of the world to the greatness of America's resources than any other article or agency of American commerce. Like a fiery pillar it seemed to have leaped into the dark cloud which had covered the ages, and sent forth a gleam of brightness that has attracted the attention and commanded the admiration of all mankind. The full extent of its uses will perhaps never be realized. It is Nature's product, and is undoubtedly composed of elements that will shortly be found of greater benefit to the human family than the simple shedding of light. The transformation wrought upon the appearance of the region of production has been most remarkable. As yet we have not passed the fourth year of its history, and what a change! Here in the spring of 1863 we find several hundred wells producing, aggregating upwards of 6,000 barrels a day. Towns had sprung up at every important strike, from Titusville to Oil City. There were Shaffer, Pioneer, Funkville, Pet Centre, Columbia, Tarr Farm, Rynd, Rouseville, McClintockville and Oil City—all booming along in the greatness of their strength and rough board buildings. Oil City had acquired the fame of a borough, with Capt. Wm. Hasson as burgess; Chas. Robson, F. M. Bishop, Chas. Haines and T. B. Hoover, Council, and C. E. Hueston, Constable, all of whom are well-known residents still, except Mr. Hoover, who is located at Bradford, McKean County. A number of small producing wells were producing within the borough limits, and these, with a conglomeration of rude dwelling houses, and what might be termed huts, for business purposes, huddled together without regard to order, comparatively speaking, with mud knee-deep, and floods every spring, which overflowed the whole flat upon which the youthful town was ascending, carrying with them barges of oil and rafts of oil barrels, and every other conceivable article of oil-region *debris*, and depositing the whole in the parlors and chambers of the residents, combined to constitute a condition of things that would be considered by the Oil City of to-day as something very extraordinary indeed. But then it was a natural consequence, and as these were annual occurrences, they began to be looked upon as a necessity in the conduct of the oil business. A man named Gillespie, while trying to steer a barge clear of difficulties that had accumulated near the mouth of the creek, one morning, slipped from his position, and fell among a lot of barrels that were floating down with the current, and descending in the flood was seen no more for a period of twenty minutes. At this juncture he appeared, clinging to a rock, just below the mouth of the creek, almost lifeless. His experience as related by himself while under the water was very interesting, to say the least, but, strange as it may appear, he refrained from breathing the whole time, knowing that to draw breath there was certain death. But this is not the only narrow escape that might be recorded, during these wild and exciting periods, whose history it is presumed will never be thoroughly written.

As we have been taking a view of affairs in a general way, we now turn to the interesting subject of developments. Of course, it is impossible, with the meagre records obtainable, now to give a correct account of all the operations during this or any other period. There were wells drilling on nearly every farm from Scrubgrass to Tidioute, on the Allegheny River, and on Oil Creek and its tributaries the same was true. At Tidioute the operations were confined to the shallow terri-

tory along the river, which makes a bend eastward at that point. As yet the daily production was confined to a few wells, which were small producers. James Parshall had one on the island and King had one on the flats, east side, while the Economists had two or three producing and commenced to drill four. As Oil Creek was the centre of all attraction, we have made a table of farms, their owners, the number of producing wells and dry holes, the daily yield of each farm, the average depth of the wells and their average cost, as near as it has been possible to reach facts. The date is up to the spring of 1863. Following is the table:

FARM.	OWNER.	Locality.	Wells Producing.	Wells Dry.	Daily Production.	Average Depth.	Average Cost.
Hays,	Unknown,	French	..	4	..	450	$6000
Bowman,	"	Creek.	..	2	..	300	3800
Longwell,	"	"	1	..	3	250	3000
Sutley,	"	"	3	..	15	500	3000
Newell,	"	"	1	10	3	400	6000
Brown,	"	"	..	3	..	400	4000
Graff, Hasson & Co.,	Graff, Hasson,	Oil	14	14	56	400	3000
Clapp,	Bissell & Co.,	Creek.	10	10	40	530	4000
Buchannon,	Buchannon,	"	11	41	148	500	3000
H. McClintock	H. McClintock,	"	16	49	250	500	3000
J. McClintock	J. McClintock,	"	6	2	60	500	3000
Steele (widow McC.)	Johnny Steele,	"	9	4	340	500	3000
Rynd,	Rynd Farm Oil Co ,	"	16	15	200	500	2900
Blood,	Home Pet. Co.,	"	24	14	490	500	5000
Tarr,	Tarr, Clark & Sumn'r	"	15	5	2000	500	3500
Story,	Columbia Oil Co.,	"	17	4	250	515	3000
Hays,	Hays,	"	2	..	4	460	2800
Hyde & Egbert,	Hyde & Egbert,	"	6	..	400	500	2500
G. W. McClintock,	Central Pet. Co.,	"	3	9	28	440	3000
Boyd,	Woods & Wright,	"	2	1	18	450	3000
Lower McElhany,	McBride & Hald'm'n	"	11	21	168	475	4700
Benninghoff,	Benninghoff,	"	3	..	16	550	5400
Espy,	Espy,	"	4	..	700	460	4500
Upper McElhany,	Hussey & McBride,	"	6	..	210	480	5000
Foster,	Irwin Pet. Co.,	"	6	4	800	470	3800
Farrell,	Farrell,	"	1	..	25	515	4000
Gregg,	D. Gregg,	"	5	2	25	500	4000
Shaffer,	Brewer & Co.,	"	3	6	10	600	5400
Miller,	Indian Rock Oil Co.	"	..	..	..	600	4000
Stackpole,	Brewer, Watson & Co.	"	3	4	9	550	3500
Stackpole,	North'n Light Oil Co.	"	..	2	..	600	4000
Bissell,	Geo. H. Bissell,	"	..	2	..	600	4000
Griffin,	N. Y. & Pa. Oil Co.,	"	3	..	10	600	5000
Bissell,	Geo. H. Bissell,	"	3	2	25	600	5500
Watson Flats,	N. Y. & Pa. Oil Co.,	"	3	1	27	600	5400
Parker,	Parker Pet. Co.,	N. side	4	2	32	500	4000
TOTALS,			211	233	6362	494	3397-22

During the remainder of the year no important events occurred except the striking of the Noble Well, as before related, which occurred in the fall of this year, and yielded so largely. The Maple Shade, also, was completed in August, and flowed 800 barrels a day. A number of other large spouters were obtained in various sections, from Cherry Run to Pioneer, but the year closed with about 10,000 barrels a day production, and oil was selling at nearly $4.00 a barrel. Just now begins to dawn the era of wonderful excitement and enormous speculations and outlay of money for wild-cat lands. Mention of this will be made in a future chapter, commencing with 1864.

A limited strictly lubricating oil development in Illinois is just now attracting some attention.

CITIZENS OF OILDOM.

IN a former number mention was made, in an article entitled "The Average Oil Man," of the characteristics of oil men generally. We now propose to speak a few words to our readers abroad of the characteristics of the "Citizens of Oildom" as we find them at the present day. It is true there have been a few changes in the condition of society throughout the whole area comprised in the "Oil Regions of Pennsylvania," since the first development on Oil Creek. These improvements have resulted not as remedial of existing wrongs, but as a natural consequence of increased population.

When the oil excitement first broke out there was a great rush thither of people from all parts of the United States, and especially from the Eastern cities and the larger towns immediately surrounding. It must be confessed that in many cases the fresh arrivals were by no means beneficial to the general welfare of the public. Together with the honest laborer, the successful speculator, and the large capitalist, came the unprincipled vagabond, bent upon plunder and general mischief. Of the latter class, there were not a few who followed the latest excitement, and for a short period in each new section were the cause of much trouble to the peaceably-inclined inhabitants. As a rule, however, their day was short. Their pleasure was cut off suddenly just when and where they least expected. Every little town which springs up as a result of some new development seeks legal organization without delay. It should be remembered here that towns and villages in the Oil Regions do not require years to become of sufficient magnitude to aspire to the dignity of "a borough," with all the facilities and equipments that the term implies. On the contrary, it often occurs that in less than one month from the date of the striking of a new well in any given locality remote from former developments, a town appears, consisting of regularly laid out streets, bearing metropolitan titles, with blocks of buildings on either side, whose gaudy glass fronts are decorated in the most showy manner with the goods and wares the public are most in need of. Sometimes a score of buildings, which are chiefly constructed of wood, hemlock at that, are in course of construction at the same time. They are erected, apparently, between two nights, so speedily is the work performed. Not infrequently migrators bring their families and all of their household effects, select a site for a building, and settle. After this is done, the goods are deposited on the spot and the building is erected around

and over them, while the children play hide and seek around the corners. A building commenced in the morning is often roofed before the shades of night have settled down upon the world, and the family sleep the sleep of peace in a new home and dream of fresh fortunes that await them in the land of their most recent adoption. It might be inquired whence come so many people to the new Eldorados? If the reader will stop a moment to consider that, in addition to those who are found in the immediate neighborhood of each new strike, there are multitudes in older sections of the region who have been waiting for just such an opportunity to remove to more active localities, he will not be surprised at the events above mentioned. As soon as the wells in any section begin to fail, it is a warning for the merchant, the machinist, the blacksmith, the teamster, the boarding-house keeper, the grocer, the butcher, the restaurant man, and the hotel-keeper to be on the look out for some other place to swoop down upon, and so, when the fresh opening is made, the attraction and rush thither are sometimes very great. Of course, there come also other characters whose absence would much improve the state of society. But, as above related, very little time is lost in making the proper application to the County Courts for protection through organization, and this done, the work of maintaining order and law becomes an easy matter, comparatively. Flagrant crimes are frequently committed, even to an occasional murder; but these cannot be abscribed to the supremacy of the elements that give rise to them. They are the results of outbursts of passion, not infrequently aroused through the agency of strong drink, which is everywhere sold. In these regards, however, Oildom is not, by any means, the only part of the State that is so seriously effected. Crimes of this character are as numerous even in the country places surrounding as in the very heart of the Oil Regions.

But it is perhaps not thoroughly understood by those who have never visited the regions that comfortable dwellings dot every mountain top and are discovered pleasantly nestling in all the valleys throughout nearly every part of Oildom. The Bradford district possesses an area of 75,000 acres of land, which includes, of course, much that is non-productive; nearly every farm that produces oil has become the habitation of industrious men, who are engaged in the conduct of affairs thereon. These, as a rule, are men of families who erect small dwellings and occupy them with the same. For this reason these vast areas become thoroughly settled and sometimes densely populated. In most cases the dwellings are small and are built in the cottage style of architecture, and in the simplest and cheapest manner possible. What is true of the Bradford field is also true of all other districts and sections throughout the region where oil is produced. As one section plays out, or, in other words, becomes completely exhausted, the inhabitants, as above stated, prepare to remove to the next nearest scene of excitement. A more delightful scene is seldom witnessed by the tourist than he enjoys by taking a night trip over one of the narrow gauge railroads which abound to a wonderful extent. These roads are constructed without regard to obstacles of elevation. They scale over the tops of the highest mountains of the region, and span ravines or form circles in their circuitous routes to "head off" unpleasant breaks in the hill sides, with the greatest of ease, apparently. They therefore offer inducements to sight-seers, as they wind around through forests and thickly-populated settlements, through towns on the hill tops, and villages in the valley, not otherwise presented. Sometimes from a car window, as the train whirls along the side of a small mountain overlooking an extensive valley, may be seen innumerable gas jets at the wells flickering in the thick darkness, and here and there "a light in the window" of the laborers' cottages, secluded as they are on the hill side, beneath the train, in the valley far below, and again on the opposite mountain side: all seeming to lend a charm or enchantment to the panorama that becomes to the verdant visitor truly a source of wonder as well as delight. Here he beholds a section of country, the topography of which is anything but inviting, especially to the agriculturalist, teeming with life and activity. Here he encounters the strongest evidence of the finest civilization. Many of those who have settled in these rural homes are people of culture and refinement, who have left the brilliant scenes of city life to seek for fortunes more beneficial and enduring. Upon their shelves may be found the most valued works of the most brilliant and substantial authors. In fact, the country abounds with people of the highest type of intelligence, who are thoroughly competent to judge of the ability and action of legislators and others who may be in authority. Then, when we turn to the men who are the leading spirits in the business of producing, transporting, and refining, and dealing, besides others who have cast their lots with the oil men, embarking, however, in other pursuits, we find they are composed of

the most enterprising and intelligent the country affords.

This, of course, presents the bright side, and should we portray another element that serves as a drawback to the influences of the more elevated, the contrast would be very great. The power of right, however, prevails, and though our cities and larger towns are well supplied with the "crude conditions" of the lowest order of society, yet the order maintained fully equals that of the most metropolitan of metropolitan cities. No person need therefore entertain fears of incurring dangers by coming to the Oil Country, as has been the case in the past. No country in the world is better supplied with the facilities for comfort as well as interest to a stranger. "Great is Oildom."

A POWERFUL GAS WELL.

IN the spring of '81, C. A. & D. Cornen were drilling a wild-cat well on lot 586, Clarendon, when, at a depth of a little more than a thousand feet, they encountered a powerful vein of gas. Drilling was continued only about five feet in the gas sand, as it was very difficult to make much progress under the circumstances. All the sand rock cut by the drill was thrown out as soon as loosened from the main body of rock. Chunks the size of hen's eggs were sent up through the derrick as though shot from a cannon. All idea of an oil well was abandoned, and a project was inaugurated for utilizing the enormous amount of gas for light and fuel. A gas company was formed, with sufficient capital stock to make the venture a success. A charter was obtained and a pipe line laid to Clarendon, a distance of three and a quarter miles. It was the company's intention to continue the line to Warren, six miles further, but winter coming on when the line was completed to Clarendon, work was temporarily suspended until spring. The well is now furnishing fuel to twenty-six drilling wells, three pumping wells, one hundred and twenty-five stoves, two machine shops, and two pump stations. On the 24th ult., a rather cold day, the gauge in the company's office showed a pressure then of seventy-three pounds to the square inch. This gas is dry, containing no oil, gasoline or water, and has never frozen on any part of the line, although the pipe is in many places exposed to the weather.

An effort was made at one time to test the pressure, and the stop-cock could not be turned more than half-way round when the indicator would fly as far as possible, showing two hundred pounds to the square inch. It was feared that the casing would be torn to pieces if the investigations were pushed farther, therefore it is not known what the actual power of the gas is. The nearest oil wells are nearly two miles away, and they are very small, so the territory in the neighborhood will not likely be drilled, which will give the gas well a long lease of life.

THE "ECONOMITE" OIL CO.

THIS peculiar organization, though known by another name, was founded early in the present century, in Würtemburg, Germany. The principal actors in effecting it were Michael Hahn and George Rupp. These men belonged to a class of religionists in Germany who had, during the preceding century, received the title of *Pietists*, which was given in a reproachful manner. The adherents were termed seceders from the established Lutheran Church, though they still retained membership in that body. The new society was finally organized in the form of a colony, consisting of a hundred or more families. The leaders were men of high character and were very zealous in devotion to the principles believed and taught, and, being eloquent in address, brought to themselves great dignity, by gathering the people together on the Sabbath-day and teaching and instructing them in matters of religion. Being persecuted and compelled to pay heavy fines, and in some instances to undergo imprisonment at the instigation of the offended clergy of the church of which they were really a part, though looked upon as *separatists*, they finally concluded to emigrate. Before venturing on so hazardous an undertaking, however, Mr. Rupp was sent out to look up a suitable location for the colony. In 1803, he purchased a large tract of land near Zelienople, in Butler County, Pa., and in the fall of the same year three ship loads of the Pietists arrived at Castle Garden. Before leaving the Mother Country they adopted some peculiar views of religion and social economy. They were followers of the Millenarian theory of the personal advent of Jesus Christ, which they believed to be near at hand. They also adopted the idea of the primitive Christians, in having all things in common.

After settling in Butler County, the society became dissatisfied with their lot and disposed of their entire possessions at great sacrifice and settled in the Wabash Valley, in Indiana. Ten years' existence in that section was sufficient to satisfy the members, and another disposal of their possessions was made. This resulted in the pur-

chase of the present site of the organization in Beaver County, this State, where a town was founded, to which the name of Economy was applied. This occurred in 1825, and ever since that date the society has been known by this title. A few years prior to the discovery of oil the "Economites" purchased a tract of timbered lands, consisting of 6,000 acres, near Tidioute, a part of which developed rich in oil. The society had acquired a large production in 1866, but, of course, at the present time it amounts to very little. The business of the organization is conducted by two trustees, in whose hands the destinies of the society are vested. As celibacy is strictly adhered to by the members, the organization grows smaller annually, and it is but a question of time until it shall have faded from earth, and its possessions will have gone into the hands of strangers.

REFINING AT THE SEABOARD.

THE introduction of petroleum into the markets of the Old World, and the heavy foreign demand which followed, shortly made it apparent that the refining interest, particularly that portion of it devoted to the export trade, would ultimately be transferred to the seaboard. Up to this time (1867) nine-tenths of the refining had been done in the producing region and contiguous points, but the establishment of a large foreign trade foreshadowed the decline of the inland refining interest and the transfer of the industry to points on the coast. This transfer was hastened by the policy of the railroads, which constantly discriminated in favor of crude oil as against refined in the matter of freight charges: the rate on refined generally representing the regular rate on the crude equivalent; that is to say, that the quantity of crude oil required to make a barrel of refined was carried for the same rate levied on a barrel of refined. This, however, was but a minor cause among those which finally drove the refining interest to the coast. The magnitude of the foreign trade, and the better facilities which the coastwise cities afford for catering to it, were among the most powerful forces; another reason was that the coastwise trade and, in fact, the markets of the entire country, could be handled more easily from the Eastern cities than from the isolated towns of the interior; the chief cause, however, was the relation which the Standard Oil Company had established with the railroads, whereby the Standard was able to transport its crude oil for a mere fraction of the charges levied upon outside shippers. This, in a great measure, destroyed competition in the refining business, and soon made the Standard absolute master of the trade—a mastery which the company signalized by assuming possession of and dismantling some fifty refineries in Pittsburg and various points in the Oil Region and the country surrounding. Meanwhile, Cleveland was made the great refining centre and depot of delivery for the western and southwestern States. A pipe line has been constructed to the works of the Standard Oil Company at this point, by which a large percentage of the crude is delivered. But for the foreign trade Philadelphia at one time seemed to offer superior inducements, but, either through neglect of the exercise of capital in a proper manner, or else through the desire of the Standard to centre the business at other points, New-York and suburbs have absorbed nearly all the Eastern trade in this direction. In each of the great seaport cities, however, the Standard corporation possesses works which are run for the purpose of supplying certain sections of the country with refined. It is estimated that this mammoth corporation now controls three-fourths of the refining capacity of the United States; that is, simply counting the works which are operated at the present time. There are also a number of what are termed "outside refiners" at various points of the country; notably, Cleveland, Philadelphia, New-York and Buffalo. There is no danger of any great want being experienced in this direction by the trade, as capital always stands ready to engage in it when a favorable opportunity offers. At Philadelphia an immense manufactury has just been established by Emery, Weaver & Logan, who expect to obtain supplies of crude by or through the Tide Water Pipe Line and the Reading Railroad. Thus some of the lost interests that once centered in Philadelphia seem to be gradually returning. A few years ago a favorable opportunity offered itself, by a proposition to construct a pipe line to the city, under certain circumstances, and had the project been supported, as it seems that it should, at the hands of the city authorities, things might be different at the present time with that city.

Philadelphia would not only not have perished, as it has to a certain extent, but it would have thriven and expanded to large proportions. Pledges were freely offered by a single party of capitalists to erect refining establishments, costing $2,000,000, there, on condition of the granting of the right of way to the pipe line, and there were others who stood ready and anxious to go into the

business provided they were afforded means of drawing their crude supplies from the oil region independent of railroads. The means were unfortunately denied, the projected refineries were not built, many of the old ones were forced into idleness, and Philadelphia's export trade in refined petroleum entered upon a period of decline only less wonderful than the causes which have produced it. In the meantime, New-York has grown corpulent on the rich diet this business has produced.

JANUARY, 1882.

Final Report of the Producers' Committee.

REPORTS were received showing the amount of oil in wooden tanks at 8,032 Bradford wells, February first. Out of this number figures were given so that a comparison could be made between the stocks at 7,509 wells, January first, and 7,586, February first. The parties who owned 7,509 on the first of January had 7,586 on the first of February. The additional number was gained in most instances by the completion of new wells. The averages in merchantable oil were as follows:

Division of Field.	No. wells Jan. 1.	Average per well Jan. 1.	No. wells Feb. 1.	Average per well Feb. 1.
		Bbls.		Bbl.
Tuna Valley	239	75 0	240	84.6
East and West Branches	1,203	101.7	1,232	113.3
Kendall Creek	1,138	77.4	1,142	89.6
Foster Brook	1,070	67.8	1,076	79.1
S., M., and Rixford	641	62.3	640	70.8
Cole Creek	891	115.7	903	122.8
Tram Hollow	475	68.7	475	89.9
Oil Valley	454	78.2	457	94.3
Kansas Branch	146	64.8	147	65.3
Indian Creek	397	86.4	401	92.5
Meek's Creek	87	64.2	89	69.5
Four Mile	341	85.3	350	88.0
Kinzua	96	125.5	97	151.5
Miscellaneous	331	98.2	337	97.9
Total	7,509	84.6	7,586	95.0

Figures from 7,586 Bradford wells show an increase of stocks of ten and four-tenths barrels per well during the month of January. It will be seen that stocks were augmented in every section of the field. The largest addition was made in the Kinzua region.

PRIVATE IRON TANKAGE.

Stocks in all private iron tanks in the Bradford field not turned over to the Pipe Lines aggregated 104,256 barrels on the first of January and 106,441 on the first of February. According to these figures the gross stocks increased seventy barrels daily in January. The number of wells connected with the Pipe Lines in the Bradford field, January first, is estimated at 11,630; the number February first, 11,747. Producers who sent in stocks at wells February first reported eighteen wells that were abandoned in the Bradford district in January. From the preceding data the following statement is made:

Time.	No. wells.	Av'ge per well.	Total Stocks. barrels.
Jan. 1,	11,630	84.6	983,898
Feb. 1,	11,747	95.0	1,115,965
	117	10.4	

Increase in stocks in wooden tanks in January	132,067	
Average daily increase	4,260	
Daily increase in stocks in private iron tanks	70	
Total daily increase	4,330	
The average daily pipe line runs in the Bradford field in January, exclusive of the Allegany field were	55,006	Barrels.
Total daily increase in stock		4,330
Bradford's January daily average production		59,336
Bradford's December daily average production		62,365
Decrease between the two averages		3,029

In the above representation 62,365 barrels is the daily average production for December and 59,336 barrels the average daily yield of the field for January. If the decline in the production were uniform each month these figures would show the production at the middle of the month. If the ratio of decrease continued during the last half of January that occurred between the middle of December and the middle of January, the production of the Bradford field on the first of February was about 57,822 barrels.

The daily average production of the Bradford field, exclusive of Richburg, for the past six months, based on data furnished by the stock reports of the Producers' Committee, is estimated as follows:

	Barrels.
1881.	
August	69,617
September	67,350
October	65,924
November	64,766
December	62,365
1882.	
January	59,336

The average daily production for January is 10,281 barrels less than that of August.

THE JANUARY RUN REPORT.

Exact figures on stocks at wells January first and February first, with runs from the same wells, were forwarded so that the average daily yield per well for 3,543 Bradford wells could be computed for the month of January. The subjoined table furnishes the data used in calculating aver-

ages for groups of wells in the different sections of the field.

Division of Field.	No. of wells Jan. 1.	No. of wells Feb. 1.	Stocks Jan. 1.	Stocks Feb. 1.	Runs during Jan.	Av. daily produc'n per well during January.
			Barrels.	Barrels.	Barrels.	Barrels.
Tuna Valley.....	183	183	18,473	19,393	13,718	2,580
E. and W. Branches	493	503	84,161	92,020	93,154	6,428
Kendall Creek.....	507	508	57,160	65,021	60,398	4,331
Foster Brook.....	508	509	69,314	77,539	54,417	3,965
S., M. & Rixford...	285	285	26,584	29,810	29,692	3,726
Cole Creek..	478	482	64,539	67,334	101,839	6,995
Tram Hollow.....	242	242	23,072	27,601	26,964	4,198
Oil Valley.....	247	247	27,036	31,113	35,724	5,198
Kansas Branch.....	44	44	2,078	2,587	2,512	2,215
Indian Creek	188	189	20,603	21,674	34,915	6,139
Meek's Creek.....	15	15	2,003	1,744	1,629	2,946
Four Mile...	95	98	9,593	8,631	14,186	4,325
Kinzua.....	46	46	6,925	8,399	5,152	4,661
Miscellaneous.....	212	212	23,763	26,173	31,992	5,235
Total.....	3,543	3,563	435,284	479,039	506,292	4,970

The averages presented above will not admit of an exact comparison with those deduced last month, for the reason that the wells used this month are not precisely the same as those used in the last report. The final average of 4 and 970–1000ths barrels accords fairly with the field average as shown by the report of stocks from upwards of 7,500 wells.

In estimating the production of the Bradford field from an average per well afforded by any number of wells, the exact number producing should be determined. A discrepancy of several hundred wells either way does not materially effect the results obtained by means of a stock report.

The time for which the compilers, J. C. McMullen and A. L. Snell, were employed, and the committee appointed, expires on the first of March. In presenting our final report, we wish to thank the gentlemen of the oil trade who have aided us in prosecuting our labors.

JOHN BROWN,
A. B. SMITH,
BATEMAN GOE,
E. H. BARNUM,
E. F. WILLETS,
Producers' Committee.

BRADFORD, Feb. 22, 1882.

THE CALIFORNIA OIL FIELD.

A THOROUGHLY posted correspondent of the AGE writes from the oil field of California, as follows: "At the present time the daily yield of oil in this State is about 300 barrels. Of this 250 barrels are produced in Los Angelos County and 50 barrels in Santa Clara County. The oil is about 41° gravity and is rather richer in carbon than the oils found in Pennsylvania. In lower California the oil produced may be said to have no paraffine as a constituent part; while in the upper or Santa Clara district paraffine forms a conspicuous percentage.

"The wells range in depth from 500 to 1,500 feet, but the depth does not depend so much upon the elevation at the surface as upon the location of the well in regard to the dip of the rock, the rock standing at an angle of 45 degrees.

"The oil is transported entirely by the Continental Oil & Transportation Company; and is manufactured by the Pacific Coast Oil Company.

"California and the Pacific Coast States consume about 5,000,000 gallons of refined per annum and otherwise use 1,000,000 barrels of crude. Of course what is not produced is transported by the above company from the eastern manufactories."

A REVOLUTION IN THE REFINING BUSINESS.

AFTER many years of investigation and experiment, a revolution in refining petroleum is effected by improvements made by Mr. J. C. Dickey, by which every producer may refine his own oil, and by reason of which the difference between shipping crude or refined oil would not exceed twenty-five cents per barrel. Under this process no chemicals are used, and a better quality of illuminating oil is made than by the old method of refining.

The process is so simple and complete that any person of ordinary intelligence, having charge of oil wells, may, with a few days' experience, become so familiar with the process as to be able to convert the crude oil into illuminating oil. Oil refined at the place of production would effect a considerable saving in labor, fuel, etc., as the machinery, tanks, etc., used in production would be utilized in the business of refining.

In the production of petroleum there will always be constructed through the producing districts narrow gauge railroads, in proportion to the developments in such districts; and when these districts are developed, the business of these roads very greatly diminishes; but if producers refined their own oil, the business of these roads, instead of diminishing, would greatly increase, and be kept up for a considerable time.

Producers refining their own oil could run their refined oil, if desired, into tank cars, which could be reshipped into broad-gauge cars by gravity, so as to be transported to any part of the country. The cost for the transportation of oil now by narrow-gauge railroads is no more than by pipe lines; but, with the increased business that would accrue by producers refining

their own oil, the cost would not be more than half of that now charged by pipe lines.

There are many good and sufficient reasons why oil should be refined at the place of production, and the oil so refined may be tanked, as it is now done, at other important points of distribution.

It is unquestionably true that this mode of refining on the part of producers will decide the matter as to whether refined oil for export shall be refined in the region or at the seaboard.

J. H. D.

NITRO-GLYCERINE.

THE most important explosive since gun powder was invented is nitro-glycerine. It was discovered by Sobraro, in 1847, who was at the time a student of Pelouze, in Paris. Until 1864, it formed no practical application, except as a homœpathic remedy for headache. It is well known that it will produce violent headaches to those not accustomed to it. Strange that it should be a remedy for the same disease, except on the basis that "like cures like;" but so it was considered, and for that alone used, until 1864, when Alfred Nobel, a young Swedish student, discovered that by detonation or concussion it could be used as a powerful explosive. He manufactured it largely and experimented with it successfully, although he sacrificed a brother to the terrible agency he had created. It is a clear, oily, colorless, ordorless, and, to the taste, slightly sweet liquid, heavier than water, and insoluble in it, but soluble in ether or methyl alcohol. It detonates in the open air under the force of a blow or shock; ignites with difficulty when poured out in a thin sheet, and even then burns incompletely without explosion. It can be evaporated at 100° C. if boiling is avoided, and it requires a heat of 360° to explode—a degree of heat which could seldom be obtained. Many authorities make the statement, which is erroneous, that it cannot explode while frozen. When it is confined or congealed by freezing, it will freeze at 15° above zero Fahrenheit—the instantaneous transmission of an impulse through the mass will explode it under a very slight shock. It is usually exploded with a detonating fuse. When badly prepared or preserved it is liable to decomposition, yielding gases which exert a pressure within the containing vessel, and create a condition of perilous sensitiveness to external shocks. The constituent parts: aqueus vapor, carbonic acid, oxygen and nitrogen. The heat liberated by the combustion is estimated to be twice as much as that of gunpowder; hence, while one volume of the latter yields in practice 200 volumes of cold gases expanded by heat to 800 volumes, an equal weight of nitro-glycerine yields 1,298 volumes, giving thirteen times the force of gunpowder. A sixty-quart shot is a large one to use in torpedoing a new well, and yet not an uncommon one by any means. The force of sixty quarts of nitro glycerine would equal 2,600 pounds of gunpowder. In fact that amount of powder could not be contained in our deepest wells. The explosion takes place much more suddenly than that of gunpowder; hence the practical gain in effect is greater than the above figures show. The very dangerous character of this material has led to various restrictions upon its transportation. It is used in many places, but is generally prepared on the spot as it is required. It was employed in the Hoosac Tunnel, Massachusetts, the United States Works at Hallett's Point, New York, and at San Francisco; but the great bulk of all used in the United States, is used in the Oil Country of Pennsylvania and New York. Previous to 1865, the oil wells were torpeded with blasting powder, but not always with satisfactory results. A number of persons were engaged in that business throughout the region, and among the number were the Roberts Bros. Col. E. A. L. Roberts, now deceased, and Dr. W. B. Roberts, both having since become known to every man, woman and child in the Oil Country, and outside of it, also, they acquired fame. It was in the year mentioned that Dr. Roberts went to New-York and purchased a portion of an importation made by the United States Blasting Company, consisting of 100 pounds of nitro-glycerine, for which he paid $500. The glycerine was buried in shallow pits on Eighty-third street, adjoining Central Park. Efforts were made continually for two weeks to induce general freight agent Rucker—Mr. Blanchard had not been promoted then, although with the company—to consent to send it through on a special car loaded with gunpowder, etc. The doctor almost despaired of having it shipped, when he suddenly became desperate, and told Mr. Rucker that he was determined to send it to the Oil Regions if he had to take it in a valise. That settled the dispute, as the agent ordered the car loaded at once, or as soon as the nitro-glycerine could be procured. An Irishman, with a good horse and dray, was hired, and the glycerine was soon on the way to Jersey City to the Erie freight depot. The drayman was cautioned about the dangerous stuff; but he was in a hurry and drove over the numerous tracks and switches with such reck-

lessness, that Dr. Roberts expected every moment to see horse, dray, man, and everything in the vicinity, go up into the regions of space. The car was loaded without accident, and in twenty-three hours after it started from Jersey City it was in Titusville, Pa., a distance of more than 500 miles. It is doubtful if ever a car of freight traveled the same distance in so short a time. The freight cost $500, and $1,000 was expended for acids, which included a portion of the contents of the car. Prof. Seely, of New-York, an analytical chemist, was hired to go out to Titusville to assist the Roberts Bros., in making experiments with nitro-glycerine. It was on Trout Run, a short distance from the then small Village of Titusville, where the first nitro-glycerine ever manufactured in the United States was made. Here the Robert Bros., Professor Seely and George Mobray made many experiments before feeling sure of the proper formula. Mr. Mobray has since become quite famous, because of his successful use of the wonderful explosive at the Hoosac Tunnel, Massachusetts. At that time he was operating a small refinery in Titusville, and was known as something of a chemist. After learning how to make it, he hurried off to the Hoosac Tunnel, and was highly successful in its use. After about two years' absence, he returned to the oil regions, but was somewhat surprised to learn that a device for exploding it under tamping, or in oil wells, had been patented by Col. Roberts some time before, and was already a large source of revenue to him.

Some very strange accidents, and horrible ones, too, have periodically resulted from handling it. A chapter of them will be published in the future. The two following are mentioned as the result of ignorance and dishonesty:

In West Virginia, some years ago, a man stole a can of it, thinking it was lard oil, and burned it during the evenings for nearly two weeks, when he happened to jar it a little one evening, and instantly what remained killed himself and little girl, and tore the house all to pieces.

A man in Scrubgrass, Pa., stole a can of it, supposing it to be lubricating oil. He used it successfully for about a week, when one day he thought he would put a little on his sand reel, which he was running very fast at the time. He just put it on, and was torn all to atoms instantly.

Careless handling and throwing of nitro-glycerine has filled the people of the regions with a horror of the stuff; but yet when a man, or a number of men are killed, there are enough volunteers to fill the ranks, and the work of death and destruction goes on with only now and then a slight cessation.

THE DIARY OF AN OIL MAN.

FRIDAY.—I arose quite early this morning for dinner. My head aches a little, but this I ascribe to mental exertion. I attended the Swordsman's Club last night; was initiated in company with two other gentlemen of note in town — Benjamin Hogan, Esq., the principal of a first-class hostelry on Main Street, and Esquire Solly, a Justice of the Peace, who *nose* everything and everybody in the city. The Club is an interesting place to be. The members are refined and possess voices that are extremely musical. Last evening the principal song, which was sung without chorus — all voices blending harmoniously — was,

"Sally, come up,
Sally, come down,
Sally, come twist your heels around," etc.

This, I was informed, was derived from the Psalms of Solomon, and was very entertaining. There was no whisky, wine or beer drank during the session — gin and sugar constituting the principal beverage.

Saturday.—This afternoon I met an old friend from the East, who had seen Mary and talked with her day before yesterday. She had received my letter bearing the sad intelligence of the robbery of the Post-office.

Attended Murphy's Theatre last night with a beautiful young lady, who furnishes the viands to customers at the Chase House. Enjoyed the occasion very much. The play, too, was exceedingly interesting. I always did like "Black Crook" there is none of this sham, false blatherskiting; about it. Everything is performed openly and with due respect for the fine sensibilities of refined tastes, such as those of my company and myself.

Sunday.—Another week has passed. It was 2.30 when I awoke this morning. Dressed myself, and came down to the dining-room for breakfast. I found the door locked and wondered how that could be. Somebody inside heard the rattle of the door-knob and, opening, admitted me. As soon as I entered the room, half a dozen girls set up a perfect titter, and told me to look in the glass. I did so. Just to my right stood a large mirror; I saw somebody's image in it, and came very near calling for the police to eject the rusty-looking intruder. It had the appearance of a man who had forgotten to take something when in great need, or to dress his hair, which was

knotted in little tufts all over his head, and dotted here and there with quids of tobacco. In his haste he had placed his undergarment over his vest, and had actually put his coat on inside out. My first impulse was to make a rush at him, and hurl him out, as an imposter unfit to stand in the presence of a gentleman of my standing for a moment. To my great astonishment he made exactly the same motions that I did, and, like a thunderclap at dinner-time, it dawned upon my mind that I might possibly some day look like the object in the glass. I therefore hurried back to my room, and, as I left the apartment, I heard loud laughter from the girls, and wondered what the fun was.

In the evening I attended church in the theatre, which had been kindly tendered a — a — ah, closely connected Baptist minister. There was a ventriloquist present, who very irreverently caused the whole congregation to get up and leave, thinking they heard the cry of fire. I afterwards learned that the fellow had stood for some time—all the seats being full—and, in order to secure a sitting, adopted the use of his profession to that end. I felt very indignant when I learned this, as I love to have things conducted in a solemn manner in church!

Tuesday.—Yesterday seems like a blank draft to me. I went down to the flats in the forenoon to see how the boys were progressing at the wells. When I got there I found the tools stuck in the hole, and while the driller was fooling around with a crowbar, with which he was striking a "tight-rope," the latter snapped in two, and one end flying around hit the driller on the nose, knocking him flat on his back, and sending the crowbar directly down the hole after the rope. This made me somewhat sick at the stomach, and nothing but a glass of sweet cider would have any effect on me. I had a pious notion to swear—something I never did in my life — but I choked it down, and wandered up to the Bonta House, where I met some friends whom I had enjoyed pleasant occasions with at the Hogan House. We went up to a private room where a fellow had a chuck-luck table, and was very busy passing red and white pieces of bone around on various spots. I saw it was conducted on the same plan as the oil business, and concluded to take a hand in the game. I found that it required money to purchase the little pieces, which they called "chips," and willingly passed over the money for fifty dollars' worth. They all looked at me as if I was a millionaire. After the third or fourth round some kind of a weakness came over me, and I fell asleep. When I awoke, a colored woman, who had just opened a laundry on my lease of the Rooker Farm, stood over me, gently fanning me with the palms of her delicate hands. My pocket-book, containing $380, which I had borrowed that day at Prathers' Bank to pay the driller, giving as security Mary's diamond ring, which I had brought with me just to make a good appearance, you know, was gone, and I had a painful sensation under my left ear as if a mule's right foot had collided with it while I dozed. I am quite certain I was not *capped* while with the boys at Bonta's.

Wednesday.—Had the blues all day.

Thursday.—Haven't got over the blues yet.

Friday.—Feel somewhat better this evening. Am very thirsty. Have had nothing to drink for three days but lime-water with a percentage of gin and sugar, just to make it drinkable. I am violently opposed to the use of stimulants under any circumstances.

Saturday.—Home-sick.

Sunday.—There was a big fire last night on the flats. I think it was at the Grant Well, on the Holmden Farm. I didn't go down to see it. I was anxious to see the result of the series of religious meetings now in progress at the theatre.

Monday.—Just learned that all the scrap-iron around my lease, except the derrick, engine and boiler, had been thrown into the well.

Tuesday.—Had a pleasant time last evening. Just before dark, Col. L. H. Smith rode up to the hotel steps on a fine horse. The boys surrounded the good-natured equine, and forced him into the sample room and tied him to the bar. It cost the jolly Colonel fourteen dollars and eighty-eight cents to have him liberated. The animal was properly fed, and *drink* was also provided.

PETROLEUM GAS.

AMONG the many advantages justly claimed for Petroleum Gas, not the least important is the great saving in cost or outlay in the construction of works, buildings, etc. Notwithstanding a royalty or patent-right premium, sometimes necessary to secure the best process or method, there is yet a very great saving in cost of construction, as compared with Coal Gas Works; for example, in the last number of the AGE it was stated, upon correct data, that one bench of three Petroleum retorts would suffice instead of two benches of six retorts each, for Coal Gas. If this statement of comparison is correct, and it will not be controverted, it needs but little, if any, explanation to show the great saving in expense as compared with any other method.

The important consideration of *space* occupied by each, will also be readily suggested to the interested reader, as it will be easily understood that one bench of three retorts will not occupy one-half the space covered by two benches of six retorts each. The economy in space is made more striking when we remember that no purifiers, scrubbers, washers, or other machinery or appliances are necessary in the manufacture of Petroleum Gas. These appliances, in Coal-Gas Works, cover at least one-third of the entire space occupied. Again, it will be remembered, that Petroleum Gas is *five times richer* in illuminating properties, and therefore but one-fifth the volume or quantity is required for a given amount of light. The saving in cost of gas-meters, tanks, mains, service-pipes, etc., would aggregate a very important sum. In sparsely settled towns the matter of space occupied by gas works is not, perhaps, so important a consideration, but in the larger cities, overcrowded and cramped as they are for room, it becomes a determinate factor. There are in all of the larger cities, public buildings, hotels, manufactories, etc., wherein the gas bill sums up an important item of expense. Many instances can be mentioned where the yearly gas bill in one of these public buildings, hotels or manufactories, reach the sum of $16,000 to $20,000, a sum, by the by, much in excess of the yearly consumption of very many important towns. The plainest rules of economy have at length induced many of these institutions to study up the gas question, and provide means of their own to supply the gas needed by them. In the case of these last-named buildings, hotels, manufactories, etc., the question of general economy, is, of course, most urgent; land, to them, is very valuable; they are cramped for room; the works or method that will give the best results, together with a saving of space, must necessarily commend itself. Again, we will be asked, has Petroleum, by reason of its many advantages, attracted the attention of those who have supplied their own gas? Where its true value is understood, *yes;* but much prejudice exists to delay the general adoption of it. This prejudice is founded upon a want of knowledge in the matter of Petroleum, generally, and especially with reference to the supposed danger incurred by using it. The great liability to explosion, spontaneous combustion, etc., these, together with many other unfounded objections, will possibly provoke a smile upon the careworn features of the veteran oil man, who has for years passed his life within the shadow of the huge oil tanks scattered everywhere through Oildom. And so there are many persons, even in these days of super-abundant stocks, excessive production, etc., who have serious doubts as to the continuance of the crude supply. These objections appear ridiculous enough to those at all familiar with the business; but they exist, for all that, and determine in a great measure the means to be adopted. Notwithstanding the prejudice, want of information, etc., Petroleum is steadily gaining ground, and rooting out other methods in gas manufacture. It may prove an interesting item of news to the people of Oildom, at least, to note the fact that Petroleum Gas Works have been in successful operation in very many cities and towns, in very many public buildings, manufacturing establishments, etc., throughout the country. Of course, the monthly reports of production, shipments, stocks, etc., do not give us this information; such, however, is the fact, and every day adds to the desired progress. In the nature of things, and as the knowledge of its important properties for gas purposes becomes more fully acquired, Petroleum will surely be appreciated. We are fully persuaded that if the truth was fully known by the Petroleum producers, relative to the progress made for gas purposes, they would be encouraged to exert themselves towards its more speedy adoption. The producers, of all others, seem to know least about the many uses to which Petroleum is adaptable, and especially upon the gas question are they absolutely blind. How many producers, for example, are aware of the fact that Petroleum Gas has been in successful operation in the Town of Tidioute since 1873? It has been our pleasure to have entertained for a brief period of time, during this interval of years, an "occasional" oil man, and though the Petroleum Gas was shining with great brilliancy, right before his eyes, illuminating his careworn features, he was entirely ignorant of the fact that any such gas could be successfully made. More than that, we have been called upon by credulous men seeking information upon this particular subject, and who, not knowing to the fact that *this* gas was then being burned in the apartment where they sat, questioned in all seriousness the entire practicability of the undertaking. We dwell upon this feature of the question, not for the purpose of appearing "highly informed," but only for the reason that such statements of fact are usually instructive. The AGE will, then, in this number, give to one oil town the credit of having utilized its crude product, and of having

demonstrated the simplicity, economy, and entire practicability of making a superior illuminating gas from crude petroleum. Sorry, indeed, the reflection that adverse fate can record but one single, solitary instance; one lone beacon light to illumine the long, wreck-strewn pathway of our misfortunes. Upon more than one occasion when the subject of Petroleum Gas was introduced and its superior merits discanted upon, we were met with the staggering inquiry, why don't your oil towns use it instead of Coal Gas? Well, of course, it is no argument, the sweetness or wholesomeness of oranges, that many persons prefer *green persimmons;* but it certainly is provoking to be met with any such a home-thrust when seeking to introduce the subject at places distant from the oil region, and it is most assuredly a reproach to oil men that such an argument can be truthfully made, although it does not prove anything against the position here taken. An offer was, in our recollection, made to the City Council of Oil City, agreeing to introduce and guarantee a superior gas to be manufactured from petroleum if only right of way and chartered privileges were granted for the purpose. This offer was not only refused, but was further *meanly ridiculed.* Since then, coal gas works have been built in that city. Another instance, not quite so glaring, but equally inexplicable, will be noticed in the case of the Asylum for the Insane, located at Warren, Pa. An offer was made to build these gas works at a cost not to exceed 60 per cent. the cost of coal gas works, and every satisfaction guaranteed. This offer was declined, because——well, because the State owned, in fee, several *oil wells* just at the point, and preferred to tax the people for more expensive works, and expensive transportation of coal. To the credit of oil men, be it said, this was the act of politicians. With no desire to belittle the subject, or to reflect upon the oil men, these facts are made conspicuous, with the hope that they may furnish "food for reflection," and awaken them to sense of the honest and urgent duties they ignore, to their cost.

M. H. B.

The Morton Well, on lot 22, Bolivar, Allegany district, whieh was thought to be dry, promises to make a small producer. It adds nothing to the fame of the field, as it is located in the gas deposit, and within the range or compass of the oil-producing territory.

The ratio of increase in consumption for twenty-one years has been just about fifteen per cent. per annum. Last year, 1881, it was somewhat higher.

FEBRUARY SALES.

FOLLOWING are the sales of the Bradford, Pittsburg and Oil City Exchanges each day during the month of February:

	BRADFORD.	PITTSBURGH.	OIL CITY.
1	924,000	411,000	1,184,000
2	1,699,000	697,000	1,867,000
3	826,000	446,000	1,326,000
4	621,000	425,000	519,000
5	. . .	. . .	. . . .
6	398,000	338,000	678,000
7	754,000	340,000	1,005,000
8	568,000	345,000	853,000
9	738,000	308,000	748,000
10	798,000	323,000	828,000
11	744,000	359,000	743,000
12	. . .	. . .	. . . .
13	954,000	283,000	898,000
14	639,000	303,000	541,000
15	1,013,000	363,000	1,030,000
16	886,000	328,000	561,000
17	1,316,000	473,000	1,209,000
18	367,000	420,000	348,000
19	. . .	. . .	. . . .
20	541,000	406,000	1,168,000
21	887,000	466,000	1,067,000
22	. . .	. . .	. . . .
23	1,364,000	574,000	1,648,000
24	1,000,000	427,000	1,205,000
25	789,000	391,000	864,000
26	. . .	. . .	. . . .
27	740,000	352,000	1,062,000
28	826,000	406,000	855,000
Totals—			
1881.			
March,	6,999,000	5,717,000	16,872,000
April,	9,792,000	4,753,000	17,209,000
May,	5,150,000	3,968,000	12,221,000
June,	4,889,000	3,848,000	10,562,000
July,	8,183,000	4,935,000	15,730,000
August,	13,406,000	6,733,000	18,287,000
Setpember,	25,023,000	12,251,000	29,110,000
October,	10,129,000	7,399,000	19,643,000
November,	17,939,000	8,998,000	23,622,000
December,	26,258,000	11,545,000	29,681,000
1882.			
January,	23,885,000	11,441,000	27,163,000
February,	19,412,000	9,153,000	22,207,000

On Cape Breton Island operations have been in progress for some time, and about a month ago a report circulated that a 500-barrel well had been struck. Careful inquiry reveals the fact that the well in question has not yet produced more than as many gallons. The oil is of a very heavy grade, and has been found in limited quantities on the Island for many years. It is a valuable lubricator, and is used for that purpose in many of the manufactories of the east.

It is quite surprising to note the constantly increasing demand for the higher grades of oil. Only a few years ago there was not more than one or two stores in a town, of say, three to four thousand inhabitants, that kept anything better than 110° oil. Now, every dealer keeps the best grades, and finds it is far more profitable to handle than the common brands. In fact, there is but little call for low-grade refined oil.

THE PETROLEUM AGE.

DEVOTED TO THE

INTERESTS OF THE PETROLEUM TRADE.

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PRODUCERS may find some things in this AGE calculated to give them encouragement.

THERE is no doubt whatever that over 24,000,000 barrels of crude petroleum will be required to satisfy the demand of 1882.

THE idea of hills of petroleum spoken of by a correspondent of the AGE in Russia, whose letter appears elsewhere, will strike the reader as something strictly fresh, as well as entirely novel.

THE Allegany, New-York, field and the Bradford, or McKean district, are represented by two pyramids. The latter as regards its daily yield is erecting a pyramid proper, while the former appears bottom upward.

EVERY producer should examine the new table of production and consumption which gives a correct idea of the growth of the petroleum business from the discovery of the article in 1859. It will be found worthy of perusal.

THE article on petroleum gas, printed elsewhere in this AGE, from the pen of Capt. M. H. Butler, will be read with interest at this time, as the subject is attracting more than ordinary attention. It would seem from the deductions made, that petroleum is destined to play an important part in supplanting coal in the manufacture of gas for heating purposes, as well as for producing a more powerful and cheaper light.

THE Allegany field continues to attract considerable attention. For this reason the AGE presents its readers with a map of that field, which they no doubt will appreciate. It shows all the streams, roads, railroads, water courses, rich, medium and light sections of the territory, and, in fact, everything of an interesting character. It is a vast improvement on the diagram system of daily papers. The draft was made by J. A. Seymour, civil engineer with the McCalmont Oil Company, and the engraving by Matthews, Northrup & Co., Buffalo.

MORE than two whole blocks, containing 360 acres each, were drilled over during the month of February in the Allegany field: that is, counting one well to every five acres of land. At this rate of drilling it will not require many months' work to complete the quota of the entire district, especially the portions considered rich.

IN this state all brokers in merchandize are taxed 3 per centum on the amount of business they do. The Assessor of this city and district, however, takes a liberal view of this questionable law, and assesses only the net profits arising from the business. When this matter was explained at the Bradford Exchange, on Saturday, the 4th inst., by the President, Mr. C. L. Wheeler, a sigh of relief was heaved by the oil brokers. A tax of 3 per cent. on the entire business would break up half the brokers in the oil region. The law should be abolished, unless amended so as to include all branches of business, together with the bondholders, whose profits are easily figured, and are, by the way, in some instances, at least, quite large.

IT is said that woman possesses a power of foresight in business relations quite superior to that of her noble lord. The truth of the statement seems to be verified by the action of a dress-maker of Bradford, Mrs. Harms, in dealing with the oil market. When oil, about three months ago, was selling at 82½ cents a barrel, she went "short" 20,000 barrels, having a stipulation in the contract with the broker that so long as she remained short she should have fifty cents a day for carrying the oil. In other words, she was to have this amount per 1,000 barrels for storage, which would give her $10.00 a day. The market seemed steady for some weeks, varying but little from her selling price. Finally it took a start upward, and everything indicated a boom. As step by step it advanced, stronger and more conclusive seemed the evidence that a 95 cent or a dollar market was inevitable in the immediate future. The market was against Mrs. Harms, but instead of covering at a loss, as her broker vainly endeavored to persuade her to do, she, womanlike, held her grip, and put up all necessary margins to keep her contract good. The market reached 88 cents, and again she margined. This, however, was the last call. The market tumbled, and when last heard from she was still short, with differences in her favor of about $2,000. It is to be presumed from this that all brokers will hasten to procure female patrons, if not partners.

The Age suggests a reunion of the oil operators of 1859 to 1864, to be held at Titusville, Pa., during the summer. It would not be a bad idea to have such a gathering meet on August 29th, twenty-three years from the date of the striking of the Drake Well, when an adjournment to Chautauqua Lake for a clam bake could be made.

It is refreshing to learn that an oil company of Paris, France, has been organized, with a capital of $3,000,000, for the purpose of developing the petroleum resources of Russia. This for a start-off is certainly good. It beats all the new companies of which our country boasts, and as yet the new concern hasn't a quart a day of production. What will that capital be when the company succeeds in obtaining a ten-barrel well?

The Forest Oil Company, one of the most successful oil-producing organizations now engaged in that business, in its annual report made to the shareholders makes some sensible statements. The report states that the expense account, wear and tear of machinery, and a small percentage for depreciation of property, combined to make the cost of production 75 per cent. greater during 1881 than the year previous. The production of the company in 1880 cost 35 cents a barrel, and in 1881, 60 cents. This great difference in cost is ascribed to the necessary expense incurred in putting flowing wells into pumping order. In the former year the wells nearly all flowed, while in the latter it became necessary to furnish them with pumping outfits. The managers advise buying producing property at present rates in preference to drilling, for the purpose of sustaining the daily production. The company possessed 376 producing wells on the first day of the present year.

If all those now engaged in urging the drill would heed this advice they would undoubtedly profit by it. The present is a good time to hold back the drill. A few months comparative rest would place the business upon a basis unequaled in many years.

Two men, named respectively John Grant and Chester Orcut, were blown to atoms on Tuesday, the 28th day of February last, by an explosion of nitro-glycerine, near the Village of Bolivar, Allegany County, N. Y. Grant had been an employee of the Roberts' Torpedo Company for about a year and a half, and Orcut was simply a passenger with him on his way to the magazine, near that village, where the deadly compound was stored. At the coroner's inquest, which was held immediately after the explosion, nothing was elicited that would in any way clear the mind as to the cause of the accident. The nearest that any of the witnesses came to plausibility in their theories was E. M. Wheeler, who supposed that the wind blew the cover of the box over against a can while one of the men was in the act of passing it to the other. The jury in the case, in rendering their verdict, severely censured the Roberts' Company: first, for not keeping a trusty man at the magazine to load and store glycerine, and destroy empty cans; second, for not prohibiting persons not in their employ from riding in vehicles containing the compound; and, finally, for allowing strangers to approach their magazines without giving a signal of danger. It must be admitted that every point in the charge is well taken, and should be heeded by the Torpedo Company. It seems strange that so many premature explosions occur when it is evident the stuff can be handled with comparative safety. In most cases recklessness on the part of the employees is the cause.

A REVIEW OF THE SITUATION.

We call attention to the table presented in this issue, which gives in an easily-understood form the date of discovery, yearly production, and total production of each field, and total production of each year, together with price and yearly consumption. (See page 145.)

It enables a comparison to be made of the relative importance of the different fields, the date of their highest production, and many other interesting features. It has been compiled at great expense expressly for the Age. The reader will note the importance of the Oil Creek division, discovered in 1859; Butler, discovered in 1869; Clarion, discovered in 1871; and the Bradford division, discovered in 1875.

The first three have furnished 95,487,485, and the latter 67,779,250 barrels, or a total for these fields of 163,266,735 barrels, which leaves but 22,334,063 barrels as the total product of Pithole, Central Alleghany, Tideoute, Bullion, Warren, Beaver and Allegany County, N. Y., fields.

The aggregate total production of these seven fields would but supply the consumption demand of 1881 alone. The Bradford field stands first, and far above all others, and is yet good for many million barrels, though now producing about 20,000 barrels daily less than it did eighteen months ago. It has not only been the greatest oil basin, but it has been able to give

the world oil at less than one-half the average cost of other fields. With a deposit like Bradford, which was discovered when Clarion was at its best, and before Butler had reached its highest production, and at a time when our consumption was about one-third of its present amount, it is not strange that there has been a large accumulation of stocks.

In the fall of 1880 Bradford and the lower country fields were producing about 90,000 barrels per day, and our consumption of that year was less than 50,000 barrels. Now against a production of less than 75,000 barrels per day, on a sure and steady decline, we have a consumption of 67,000 barrels (15 per cent. more than consumption of 1881) per day, and a shrinkage by evaporation, sediment and loss, of 3,000 barrels per day. This would leave our present production only about 5,000 barrels per day over this year's average requirements.

Bradford has declined during December, January and February at least 8,000 barrels per day, and should it decline at a somewhat smaller ratio, and Allegany and Lower Country produce no less June 1st than now, which seems very improbable, we should enter that month with production but little greater than our consumption, and stocks none too large for the requirements of the trade. They are none too large now to prevent extreme high prices, which would interfere with the present rapid increase of consumption; none too large for the refining and pipe-line interests to handle with their present capacity; none too large for a commodity with so unsteady a supply; and none too large for a trade in which there is so large a speculative interest, and in which the sales and re-sales aggregate 1,000,000 barrels and upwards every day at the various oil exchanges.

The stocks are none too large, taking into consideration the present condition of the producing area, together with the facts that with their increase has grown also the demand for the product, and increased facilities for handling and storage, and that confidence in certificates, as one of the safest and most easily-convertible securities banks and the trade can hold, is fully established. It is safe to say that it would be for the good of the trade to maintain the stocks up to the amount of the ability of the pipe lines to handle them.

The problem of very great interest alike to dealers, consumers and producers is, "Does the situation indicate that the production, at present prices, will keep pace with the increase of consumption?" Should we have but the small decline of 2,000 barrels daily, per month, in the present known fields, this year would end with consumption many thousand barrels per day greater than the production. Should other fields be opened up, even to the amount of 10,000 barrels daily, at the end of the year still the consumptive demand would be drawing upon the stocks. Notwithstanding the discouraging features of the past eighteen months, the production and consumption are 30,000 barrels daily nearer together than in the fall of 1880, with the price of the commodity much lower, and cost of producing it much higher, by reason of scarcity and enhanced value of producing territory.

WHO IS TO BLAME?

FOR many years the producers of oil have been laboring against odds which have been difficult to overcome. They have had small renumeration for the troubles and outlays incurred in the conduct of their business. It is, perhaps, unnecessary here to state that they have considered the great United Pipe Lines, together with the great purchasers of the crude product, as their immortal and united enemies. Many have been the innuendoes that have fallen from their lips when they have been unable to market their production, and even succeeding in this; to receive what they considered a limited allowance for the same. To a person who occupies the position of the PETROLEUM AGE, which is that of a third party, or a mirror of the business, the scenes that have been enacted in the past, have been very peculiar, not to say, ludicrous. Two years ago the daily yield of the Bradford field was very great. In fact, its highest point was never estimated, as a large percentage was permitted to overflow the tanks, and was lost to the world. At that time the summits of Cole Creek and the Bingham estate were pouring out the precious liquid at a wonderful volume, and the more it poured out, the greater appeared the desire of the producers to furnish the *avenues* for its safe conduct to the surface. It was truly astonishing how the work of sinking wells progressed, and with no prospect of improvement in prices, which were ranging between sixty cents and eighty-five cents a barrel, and sustained at that only through the efforts of the principal purchaser, who seemed to buy just what he wanted, and let the remainder go where it pleased. There was an universal wail of distress heard throughout the entire length and breadth of the region. Hundreds of producers who had succeeded in obtaining wells

of more than average capacity, were forced to part with them at nominal sums, or have the sheriff perform the task for them. The production of the field arose so rapidly, that the Pipe Lines declared their inability to take care of the production, and the United alone proceeded to the erection of a 35,000-barrel tank every day for a season, in order that this might be accomplished. The managers avowed that they were doing all in their power to furnish relief. Whether this was true or false is not now a question for consideration. At all events, a sufficient number of tanks were completed to receive and store the surplus. Stocks, meanwhile, accumulated from 10,000,000 to 24,000,000 barrels, which fact would seem to indicate that the Pipe Lines made, at least, some effort to bring relief, as nearly all this storage capacity was either erected or leased by them.

But the striking peculiarity of the whole business was the disposition of operators during all those days and months of distress and waste to urge the drill. It was positively an every-day occurrence to behold operators in the act of starting the drill at No. 2, 3, 4 or 5, or any other number, when all the preceding numbers were flowing on to the ground. In one instance, near Duke Centre, a stranger, while passing a producing well, noticed the oil overflowing the tank. Passing some men who were preparing to drill a well in close proximity, he took occasion to enquire why somebody did not look after the necessities of the producing well, by having a tank erected. The owner, to whom the man happened to address his conversation, replied he had no time to attend to it; that he was very anxious to get this new well started. It seemed to seize the element as a mania, and in looking back over the scenes, it becomes, as above stated, a peculiar matter. In all these years of distress, therefore, the producer has had himself to blame. If he could not acquire a sufficient competency by following up the business, it was his duty to cease operating. And what was true of those days is as true of to-day. The spectacle just now witnessed in the Allegany field is another indication of this recklessness, and causes the mind to revert to the scenes of '79. Here they repeat the old, old story of keeping some distance in advance of the ability of the pipe line to receive the daily yield. They tumble over each other in Allegany, just as they did in Bradford, in their inordinate haste to drill wells, regardless of consequences. They fall upon their knees in the presence of the managers of the Line in that section, imploring them to run their oil, and with equal reverence approach the rig-builder and the machinery-men. They boast of their ability to increase their production on short notice, and they have been doing it without any notice whatever. Much of the oil has gone to waste during the past month, and it looks very much as if they were themselves to blame for it. There was no earthly use for bringing that field up so rapidly. One-half the number of wells completed each month would have been much better for each and all engaged. But they will drill, and because of it they *will* keep the price of oil far below the point at which it should rest. Truly, for this, the producers are to blame.

THE CONDITION OF TRADE.

IT has been ascertained on careful inquiry that the output of oil, crude and refined, for the fiscal year ending February 1st, 1882, was 57,000 barrels a day. Stocks at the sea-board also were reduced about 4,000 a day, making a total of 61,000 barrels, which should represent the daily consumption. Of course, there was a slight increase of stocks abroad, but this increase is entirely overbalanced by the augmented demand from every quarter of the globe. It is an inspiring state of affairs that Asia has arisen to make demands upon us for our light. It is a fact that a New-York refinery (Lombard, Eyers & Co.) has a contract with a Chinese importing firm for a large percentage of its manufacture. And what appears the most encouraging about this is its "freshness." Straws are indicators, of course, of the direction whence cometh the wind, and these transactions are ample proof that our product is rapidly being introduced into entirely new and remote localities. If the same ratio of increase should continue in the future as during the past year, when it was fully thirty-five per cent. in foreign countries, the time is not far distant when we shall be unable to supply the wants of the world, unless other Bradfords are discovered to aid in the matter. It is apparent that it is but a question of time when 100,000 barrels a day of crude oil will be required to satisfy all the cravings of this great industry, and, moreover, it would seem when that time arrives (which would only be about three years at the present ratio of increase) that there would still be room left for further augmentations of the demand until one hundred and fifty or two hundred thousand barrels a day would be required. The question of supplying these enormous quantities is not considered, by producers, of great importance, as they hope to

be always able to "fill orders." They look upon 26,000,000 barrels of stocks which they have elevated to the surface in the oil regions during the past ten or twelve years, in excess of all demands of the trade, as a successful stride in the direction indicated. They look out over the great expanse of territory embraced in the boundaries of the oil belt, and trust to the fortunate drill to keep on developing new fields and fresh sources of supply. Should they meet with disappointment in this particular, however, there would be trouble, and the price of oil would bound upward with a velocity equal to occasions in the past, when the space between twenty-five cents and four dollars a barrel was lapped in a very short period.

By reference to, and a perusal of the outlook on another page, it will be seen there is a fair prospect of a continued depreciation in the great Bradford district. To effect this, in a measure, we find a pyramid being erected in Allegany, bottom upwards. The two important fields are playing opposites. Bradford is towering itself to a pinnacle nicely. While these are struggling in this manner, Germany is making a big effort to unearth something of value in her questionable oil fields. As yet, however, she has made poor headway, and many years will probably elapse before the trade in the American article will be seriously effected by the German development, if indeed such an event lies within the range of the possibilities of the future. Thus far the foreign demand continues to such a degree as to sustain hope of a vast improvement during the year, even over 1881, which has been considered the most successful of the petroleum age. Good judges and fine figurers have calculated that it will require between 65,000 and 70,000 barrels a day of crude all the year to comply with the wishes of trade. Should these prognostications prove correct, there would appear but little to discourage those whose interests are on the side of better prices. Of course, a vast improvement cannot be looked for so long as the drill of Allegany is kept as busy as at the present time. It would seem but a short step for the market to take from eighty-five cents to one hundred, and yet this step will probably not be taken while there appears room for the expansion of producing areas. Let the fiat be promulgated that the outlines are set, and that no further augmentations are likely to occur, and the burthen of increased stocks will be found to be extremely light. The causes, therefore, which act in unison to prohibit an advance are easily seen. Elsewhere this subject is treated more fully.

RUSSIAN HILLS OF PETROLEUM.

A FORMER operator of the McKean district, who some time ago went to Russia for the purpose of assisting in the work of developing the oil field in the southern part of the Crimea, writes regarding the field as follows: "Am located fifteen miles from the City of Kertch, and am in the employ of the Petroleum Oil Company of Paris, France. We located the first well, and commenced business soon after our arrival last fall. We drove five different kinds of pipe before we reached bed-rock at 300 feet. The first was fifteen inches in diameter, the second, twelve inches, the third, ten inches, the fourth, eight inches, and the fifth, six inches. These were driven through a tough clay, very much like putty in consistency. As soon as this clay gets wet it caves and packs around the pipe to such an extent that it is impossible to drive the pipe through it. This is the reason for using so many different sizes of pipe, as the smaller is driven inside of the larger as soon as the latter ceases to move downward. We had to move the rig twice on account of crooked holes. This was done without tearing it down, and it was moved 400 feet each time. The wells are now abandoned, as the pipe will go no farther, and solid rock has not yet been reached. The driver or ram weighs 2,200 pounds, and is dropped ten feet every time. It is easily understood, therefore, what a pressure there exists against the pipe. It sometimes requires twelve strokes to drive it one inch. About half a barrel of oil was taken out of the clay per day. The natives bore with a pod augur 30 or 40 feet, and bail out about one-half barrel of oil a day, which is worth in the City of Kertch about $5.00

"One of the curiosities of this country is a hill of Petroleum, which the company proposes shipping to Paris. This company is very wealthy, having a capital of $3,000,000. It has $38,000 invested in oil-well supplies in the City of Kertch alone. It has seven ships on the Black Sea, and expect that there will be one thousand shiploads of the petroleum hill. This hill is composed of a mixture of clay and oil. They are formed by boiling springs, which abound all over this part of the country. They boil up out of the level ground, and form a kind of hill. The water runs away, leaving an argalacious mound, and when the spring becomes extinct the hill of Petroleum remains. The company proposes reducing the material, at Paris, to an article of commerce. It claims that it can manufacture a good

article of illuminating oil from this raw material; also asphaltum.

"The occupation of the people around Kertch is stock-raising, and they live in villages. The hair of the natives all turn gray at the age of thirty. The hair becomes perfectly white, and such a thing as a dentist is not known in the country. Everybody's teeth are sound. There are no trees in this country except those planted out, but vegetation is very luxuriant. As an oil field, it therefore contrasts strongly with Pennsylvania."

KIND WORDS.

—The PETROLEUM AGE, for February, made its appearance yesterday, and in the quality of its reading matter, and the completeness of its statistics, is far ahead of any former issue. The AGE certainly occupies a field that heretofore has never been filled, and that it will "live and grow fat" there can be no doubt.—*Olean Herald.*

—Again our table groans under the dignified weight of the stately PETROLEUM AGE. We read it with pleasure, pride and profit.—*Enterprise.*

—The February number of the PETROLEUM AGE was issued last week. If possible, the present number is more attractive and apparently useful than the issues which preceded it. The information the AGE gives must be invaluable to any one largely interested in the oil trade. The press work was done in the *Buffalo Express office*, and is a beautiful specimen of typographic art.—*Bradford Sunday News.*

—A very interesting and valuable publication. We believe this journal fills an actual want, and, consequently, will succeed.—*Potter Enterprise.*

OVER in Germany they have struck upon a new plan for the increased consumption of petroleum. Of course the inventor was unconscious of the great benefits he was about to bestow upon the producers of the article away over here in America. Nevertheless he shall be known and described as a benefactor if his name ever becomes known to the public. It is said this gentleman is a manufacturer of Limburger cheese, and by using a certain percentage of raw or crude petroleum in the composition the odor from the material, which to some people has always been so offensive, is considerably modified. Besides this, the cheese is made much more pleasing to the palate and is more conducive to good health. Here is an opening for some stalwart cheese-maker of this region. It is said this class of producers is very large in the country immediately surrounding Bradford; and as the supply of crude petroleum is very large, and can be obtained at moderate cost, there is no reason why the people cannot be supplied with a pure and inoffensive article of diet. One point gained by the new process is in this: that its unwelcome presence will not be felt by the organ of scent long before it is observed by those of vision.

IT is officially announced by Vice-President Jones, of the B., N. Y. & P., that this corporation has leased the Genesee Valley Canal Railroad Company, extending from Olean to Rochester, a distance of 110 miles; also the following roads: Kendall & Eldred, Bradford & Kinzua, McKean & Buffalo, and the Olean, Bradford & Warren. With these leases there is also the acquired property of the Buffalo Coal Company, consisting of 18,000 acres of coal lands in McKean and Elk Counties. When the Buffalo, Pittsburg & Western, now building, is completed to Buffalo, it will be appreciated by the Oil Region public. The syndicate, now controlling the above roads, is adopting a liberal system that will ultimately redound to the general prosperity of the large section of country tributary to them.

MR. R. D. Rockwell, now cashier of the *Buffalo Express*, was one of the original purchasers of the Buchannan Farm at Rouseville and was a shareholder with Mr. Rouse, whose death by burning is elsewhere related. Mr. Rockwell also assisted in organizing the Oil Creek Railroad Company in 1864. He was the first to adopt the system of keeping records of producing interests on printed slips, very much the same as those used at the present time. Mr. Rockwell left the country in 1865 with a fortune of $65,000.

A RAILROAD war broke out on Saturday, the 4th inst., between the Allegany Central Railroad, and the Bradford, Eldred & Cuba R. R., regarding certain rights of way extending from Bolivar to Ceres, N. Y. The difficulty will be settled amicably no doubt. War is a useless and expensive luxury.

A COMPANY is now trying to persuade the people of Buffalo into granting the right within the city limits to manufacture gas from petroleum products and to convey the same to the citizens. This enterprise consummated would inure to the welfare of that city.

REPORT
OF
OIL OPERATIONS FOR FEBRUARY.

WELLS COMPLETED.

TUNA VALLEY.

Lot.	*Operator.*	*Production.*
Irvine,	Irvine Oil Co.	10
Scott,	Butts & Clark	15
	Beatty & Haldeman	15
	" "	12

EAST BRANCH.

American Oil Co.,	A. O. Co.	10
Cutting,	Drake	10
Deiter,	Emery Oil Co.	10
Clapp,	J. M. Clapp	15
	"	15
Morris,	Emery Oil Co.	10
Morris,	" "	12
Brown,	Talley	10
Degolia,	Quintuple Oil Co	10
Shady,	Watson & Fulton., No. 4	10
Dykeman,	Hampshear & Weaver	10
Jewett,	Quintuple Oil Co., No. 9	10
Cary,	A. Ford	10
Greg,	Greg	10

WEST BRANCH.

Crooker,	Crooker & Deming	8
Tram Road,	Union Oil Co	6
Emery,	Kuntz	dry
Wells		21
Production		218
Average		10.38

QUINTUPLE TRACT.

Lot 23,	J. E. Ralph, No. 3	10
136,	J. H. Campbell & Co., No. 2	10
184,	Hazelton & Co., No. 3	15
186,	Vrooman & McGraw, No. 3	12
214,	Kane City Oil Co.	15
218,	Gardner, Cheney & Co.	15
219,	Abbott & Proper	15
237,	J. A. Wing & Co.	10
241,	Barnsdall Bros., No. 1	15
253,	Clark & Foster, No. 3	15
52,	J. C. Wales	10
Wells		11
Production		142
Average		12.90

KENDALL CREEK.

Melvin,	P. C. L. & P. Co.	10
Buchanan,	Anchor Pet. Co. No. 13	15
W. J. Boyd,	Zane & Taylor No. 12	15
Raub,	Ralph Pettibone	10
Fisher,	Peck & Freeman No. 16	15
Turner,	Pagett No. 4	15
Moore,	Moore & Butts	20
Breneman,	G. H. Van Vleck No. 12	15

FOSTER BROOK.

McMurray,	McMurray & Co.	10
Borden,	Howe Bros.	15
McKelvy,	Dewitt Oil Co. No. 11	10
Tait,	Joe Tait	10
Buzzell &	Chapman	10
Argue Bros. &	Cobb	10
" "	No. 12	10
Smith &	Foley, No. 4	10

SUMMIT, MARION & RIXFORD.

Borden,	Oak Shade Oil Co.	6
"	Urquhart & Lavens No. 7	10
"	Shear Bros. & Braunchweiger No. 11	10
Mather,	C. B. Whitehead	10
Dodge,	Bradner & Boyer	8
Ingram,	Robert Gregg No. 4	12
Cummings,	Green & Zimmerman	15
Cornen,	C. A. & D. Cornen No. 15	10
Berger,	H. J. Pemberton	8
Chambers,	Hazelwood Oil Co.	12
Book,	" "	25
Wells		27
Production		326
Average		12.07

OIL VALLEY.

Duke,	C. H. Coffin, No. 21	12
Borden,	Feritig & Herme	15

STATE LINE.

Barse,	Hays & Hastings	10
Borden,	Forman & Lawton	20
Angell,	Johnson	12
"	Williams	10
"	Burns Bros., No. 8	15
Barse,	Ryan & Co.	12
Borden,	Forman	20

INDIAN CREEK.

Loop,	J. D. Downing & Co.	10
Loop,	James O'Neal, No. 12	10
Loop,	Loop, Hart & Hicks	12
Loop,	Peck & Fillett	10

KEATING.

Forest	Oil Co.	10

MEEK'S CREEK.

Gale,	Curtis & Taylor, No. 5	10

FOUR MILE.

Van Campen,	Franchott Bros.	12
Johnson,	B. Alvord	15
Joe Waters,	Howard & Baum	15
Dye,	Coleman & Bell	15
Shottuc,	Welsh & Van Schaick	15
Howard,	Evans	15
Shattuck,	Howe & Eaton	10
Wells		22
Production		285
Average		13

KINZUA.

U. O C.,	Union Oil Co., No. 31	25
Conover,	Chapin & Co	4
Jamison,	H. A. Jamison	10

BIG SHANTY.

Dent,	Dent Oil Co., No 12	40
Dent,	" " No. 13	40
Bingham,	Wishewauka Oil Co	20
Bingham,	lot 156, J. J. & T. J. Vandergrift	15
Bingham,	lot 93, Lockwood & McKevitt, No. 4	18
Sulivan,	Waugh, Porter & Book	20
Sulivan,	Mills & Mullen, No. 4	20
Sulivan,	Book & Tait	25
Sulivan,	" "	30
Sulivan,	Union Oil Co., No. 15	20
Tailor,	Mills & Mullen, No. 5	15
Hamlin,	Minard Run Oil Co., No. 10	20
Dent,	Whitney & Wheeler, No. 7	15
Tunungwant,	Book, No. 2	30
Bingham,	John McKeown	5

DUTLANDS.

P., C., L. & P.	Co.	20

MOODY TRACT.

Moody Co.,	No. 77	30
"	No. 78	25
"		10

COLE CREEK AND BINGHAM.

Bingham,	Hamlin & Rose	10
M. W. & H.,	Forest Oil Co	10
" "	W. W. Thompson	15
" "	965, Tucker & McCormick	15
" "	278-9, Cumulative Oil Co	20
" "	470-1, Aiken & Whitney	20
" "	478-9, Murphy, No. 8	25
" "	468, John Eaton, No. 5	sand
" "	468, " No. 6	20
" "	466, Cornwell	18
G. & V. pur.,	U. O. Co., No. 18	20
" " "	No. 24	20
Simpson,	George V. Forman	40
Simpson,	" "	25
"	406, J. L. McKinney, No. 8	15
Wells		36
Dry		730
Average		20

MISCELLANEOUS.

Wyoming Co.,	Mahogany Co.	dry
Blood Station,	N. Y., Shaffer	dry
Potter,	Thomas	dry
Elk,	Johnson	dry
Wells		4
Production		0

MIDDLE FIELD.

Lot 56,	Union Oil Co.	10
77,	E. McDermot, No. 3	10
77,	Hoffman & Landis	10
78,	D. Beatty	12
80,	Barnsdall	10
80,	Thayer & Crosby	10
80,	Windsor Bros.	10
105,	Brinton & Co., No. 1	10
105,	Atkinson & Co., No. 4	12
105,	George Given	12
105,	Branch & Co. No. 2	10
105,	Short, Oyster & Thornton, No. 3	10
105,	Fisher, Weaver & Co.	12
106,	O. F. Schonblom	10
106,	Conrath Bros.	10
106,	Coultenbaugh & Townsend	12
107,	H. P. Malone	10
162,	Clark & Amor	10
397,	Roth & Co.	10
495,	Elias Keatz	10
594,	Sherman & Estep	10
477,	R. Thompson	15
497,	Roth H. Crowell	10
498,	Hopewell & Co	11
498,	Hopewell, Paine & Co	12
Lot 498,	Smith & Schemerhorn	12
498,	New Hope Oil Co	20
528,	Armstrong & Speer, No. 7	10
530,	Bradenbangh & Hopkins	12
Asylum lot,	H. A. Jamison	10
Brennan,	Porter & Topper	10
Williams (Sheffield),	McKinney & Co	20
Wells		32
Production		363
Average		11

THE LOWER FIELD.

CLARION.

Farm.	*Owner.*	*Production.*
Egypt,	M. E. Hess	10

BYRON CENTER.

Sutton,	T. Hays	9
J. H. Crawford,	E. G. Crawford	8
Trout Run Oil	Co	7

ANDERSON, VENANGO COUNTY.

Gates,	Rouseville Oil Co	8
Gates,	Fisher Bros	10
Allison,	Fisher Bros	5
McBride,	Milton & Co	5

BUTLER AND ARMSTRONG.

Leonard,	Leonard & Parker	8
Thomas,	Thomas & Co	6
Fryer,	Fryer & Co	10
Shakley,	Haggerson Bros. & Co	5
Jemmison,	Hyland & Hutchison	5
Gibson,	Monroe & Watson	dry
Eichenlaub,	Phillips Bros	dry
Robinson,	A. C. Scott	dry
Kelly,	McCandless & Co	8
Wells		17
Production		104
Average		

ALLEGANY FIELD.

BOLIVAR.

Lot 6,	Breun & Morse	7
8,	Campbell Oil Company	dry
8,	J. Story	10
8,	Hopkins	8
14,	Campbell & Co	10
15,	Skinner Oil Company, No. 2	8
22,	H. J. Morton & Co	8
24,	Camron	20
24,	Johnson & Partlett	15
24,	Mooney & Galey	20
24,	" "	18
24,	Milligan Bros.	15
24,	Boulton & Bros.	18
31,	Fisher Bros.	20
31,	Penny, Packer & Shreve	18
32,	Kansas Oil Company, No. 4	30
33,	Hardison, Collins & Ritts, No. 9	30
"	" " " 13	20
"	" " " 14	20
32,	P. M. Shannon & Co., No. 3 and 4	50
32,	John Cochran, No. 4	20
32,	" " 5	35
32,	" " 6	20
32,	Black & George, No. 7	30
32,	Thomas Hacket, No. 3	30
"	" " 4	40
"	" " 5	30
32,	Bradley & Green, No. 5	25
"	" " 6	30
32,	Brown & Reid, No. 3	30
32,	Smith & Co., No. 6	30
"	" " 7	25
38,	Dyer & Carroll	15
39,	Weiser & Kinkaid	20
39,	Hugh O'Neil & Co., No. 2	20
39,	C. W. Emerson & Co.	15
39,	A. A. Richardson, No. 1	25
39,	Whitney & Good, No. 1	20
39,	Meldrum Farm Oil Company, No. 8	20
39,	B. F. Palmer, No. 3	20
39,	" " 4	20
39,	Forgie Bros., No. 3	25
39,	McCalmont Oil Company	20
39,	H. P. Malone & Co., No. 3	12
39,	" " 4	15
40,	B. F. Palmer, 2 wells	45
47,	Barton & Warner	20
47,	Lafayette Oil Company, No. 3	15
47,	Stock & Keller, No. 2	20
47,	Clarion Oil Co. No. 5	15
47,	" " No. 6	25
47,	Brawley Bros., No. 4	15
47,	Moriarity & Co., No. 2	15
47,	" " 3	15
47,	J. Varney, No. 4	15
47,	" " 5	20
47,	" " 6	15
48,	A. W. Nelson & Co., No. 3	25
48,	Thompson, Matteson & Wallace	20
48,	F. W. & A. B. Weiser, No. 4	20
48,	Steel & Plummer, No. 2	40
48,	Smith & Zeigler, No. 5	20
48,	McCalmont Oil Company	25
48,	Hardison, Collins & Ritts, No. 8	15
55,	Hanley & Hefferman	20

Lot 55, McCracken Bros. & Eliason, No. 2 . 35
55, " " 3 . 40
55, Smith & McCracken 20
55, Gibbs & Gahagan 20
56, Anderson & Humphrey, No. 3 . . . 55
56, " " 6 . . . 35
56, Zeigler & Smith, No. 4 60
56, " " 5 55
56, I. L. & W. P. Haldeman, No. 3 . . . 30
56, " " 4 . . . 30
56, " " 5 . . . 20
56, McCalmont Oil Company 30
56, " 30
56, " 31
56, McCalmontchild 25
56, Hamlin & Rose 40
56, " 30
64, Armor & White, No. 9 30
64, " " 10 40
64, " " 11 30
64, Dyer & Whitnell, No. 3 30
64, Hoover & Thompson, No. 4 56
64, " " 5 . . . 20
63, J. T. Cooper & Co., No. 3 30
63, Cooper Bros. 25
64, Wellington Smith, No. 4 10
63, " " 6 10
64, John Cornwall, No. 3 25
64, J. C. Lineman, No. 5 30
64, H. & W. Hardison, No. 3 20
64, Forman & Ballard, No. 4 30
64, " " 5 30
64, Reed & Kerwin 25

Wells 98
Production 2372
Average 24.20

GENESEE.

Lot 7, J. C. Smith & Ford 10
8, H. J. Morton & Co., No. 12 . . . 20
8, " " No. 13 28
8, " " No. 15 25
8, J. C. Lineman 30
8, I. Willets 20
8, " 30
8, " 18
8, Merrill, Perrin & Co., No. 3 . . . 30
8, " " No. 5 . . . 15
8, J. O. Johnson & Jones, No. 3 . . . 30
8, Hays, Knox & Co., No. 3 30
8, " " No. 2 . . . 40
8, Bussell & Urquhart, No. 2 15
8, J. C. Smith & Son, No. 3 30
16, G. S. Bussell 15
16, Wheeler & Galey Bros., No. 4 . . 15
16, " " No. 5 . . 20
16, Morrison & Bennett 10
16, Jones Bros., No. 1 25
16, " No. 2 15
16, A. P. Tanner, No. 3 15
16, D. W. Canfield, No. 2 10
36, Short & Co . . . . . dry
16, Merrill & Perrin 20
16, " " 15

Wells 26
Production 531
Average 20

CLARKSVILLE.

9, Empire Gas Co. . . . . dry
9, Henry Werthman 8
9, Daggett Oil Co 10
9, " " 11
9, " " . . . . . dry
9, Book & Rhodes 12
9, " " 15
37, Congdon & Co. . . . . dry

Wells 8
Production 56
Dry 3
Average 7

ALMA.

Lot 1, Empire Gas Co 3
17, Gaskill & Workman, No. 2 10
17, O. P. Taylor & Co., No. 4 10
23, Dow & Browning 10
39, Duke & Norton, No. 12 12
40, Duke & Norton 10
40, McCoy & Weater 15
40, Sheffield 10
40, Dewese & Weaver 20
40, Morse & Williams, No. 6 18
143, Elliot & Doty 12
143, Brush & Cole 15
144, William Chambers 15
144, Love & Prescott 18
144, L. Merket 25
144, Pennell Bros 12

Wells 16
Production 215
Average 13.42

WIRT.

Lot 17, Taylor & Humphrey, No. 3 20
17, Fox & Barber 20
25, Harry White No. 2 20
25, Rugh & Shoemaker 25
25, Duke & Briody No. 11 30
25 " " 12 30
25 " " 13 25
Lot 25, P. M. Shannon No. 4 40
25, L. Whitney 25
25, Manhattan Oil Co. 25
25, Kansas Oil Co. No. 12 30
25, Kansas Oil Co. No. 13 25
33, Patty & Bliss, No. 6 20
33, Geo. V. Forman, No. 5 15
33, Geo. V. Forman, No. 6 15
41, M. C. Mulkin 10
41, M. C. Mulkin 10
41, James Scott 10
49, Huff, Ege & Anderson No. 6 . . . 40
49, " " " 7 . . . 35
41, J. Jordan No. 4 20
41, Smith & Bartlett 25
41, Richardson Bros. 20
41, Woodward & Co. 10
41, Davison 25
41, Lester & Cotterell 20
41, Wellman, Miner & Pitts 15
41, Wellman, Miner & Pitts 10
49, A. A. Richardson, No. 5 40
49, Ward & Gilligan 20
49, " " 40
49, Finnegan & Co. 50
57, Loan & Thompson, No. 9 30
57, " " " 13 30
57, " " " 14 20
57, E. W. Coleman & Co. No. 3 35
57, D. B. Whipple, No. 3 35
57, Reed & Kervin No. 3 20
57, J. J. & T. J. Vandergrift No. 6 . . 20
57, " " (Ballard) . . 15
57, " " " . . 10

Wells 41
Production 980
Average 23.39

DRILLING WELLS.

McKean District.

TUNA VALLEY.

Lot.	*Operator.*	*Depth.*
Leonard, D. S. Allen		rig
11, Leonard		sand
Scott pur., Hillman & Bowers		rig
"	Haldeman & Beatty	rig
"	Abbott & McGinis	400
Evans, Henderson & Bowman		550
Lee, Rogerson & Cochrane		rig bldg
Scott, Curtis & Boggs		rig

EAST BRANCH.

E. T. Co., E. T. Co.		rig bld'g
" "		rig bld'g
" "	Bemer	drill
Cutting, Guy Drake No. 2		rig bld'g
Wright, F. G. Keatley No. 3		rig
Pike, Book & Rhodes No. 6		rig
B. I. Taylor, Bovaird & Seyfang,		rig
"	Breckenridge & Harper No. 3	rig
"	Risher & Zeigler No. 5	drill
Haward, Gardner & Co.		rig
J. Brown, Gilbert, Shipman & Co.		600
Hawkins, P. C. L. & P. Co. & P. T. Kennedy No. 11		rig
"	Union Oil Co. No. 9	rig bld'g
Shady, Fulton & Watson No. 4		rig
Drake, "	No. 2	sand
"	J. S. Book & Co. No. 22 fishing	400
"	Risher & Zeigler No. 2	sand
"	Morris & Co.	800
Deitter, Emery Oil Co. No 14		1000
" " "	15	1000
" " "	16	rig
Morris, " "	32	1000
" " "	33	200
" " "	34	200
" " "	35	rig
" "		3 rigs
Tibbits, "	No. 2	rig
Dikeman, Whitney & Wheeler		400
Fuller, American Oil Co		sand
" " "		rig
J. DeGolier, Quintuple Oil Co. No. 11		800
Clark, Hanna		rig

Drilling 24
Rigs 18

Total 42

QUINTUPLE TRACT.

Lot 25, J. S. Wilson		drill
25, " "		rig
25, " "		rig
42, Tarbell & Morris		300
55, B. T. Brinton No. 2		drill
72, E. K. West		600
103, Geo. Woodward		500
111, Gardner & Hazelton No. 1		400
111, " "	No. 2	rig
120, Venture Oil Co.		1358
136, J. H. Campbell		sand
150, Woodbury & Campbell		rig bld'g
155, E. Strong & Co.		rig bld'g
156, Chemung Oil Co. No. 1		rig bld'g
152, H. J. Beers		drill
175, D. Atwater		rig bld'g
Lot 176, H. A. Booth		rig
180, A. F. Heald		rig
193, M. J. Seymour		rig
193, " "		rig bld'g
203, Butler & Martin		rig
205, J. A. Vera & Co.		rig
197, Heald, Cisco & Co.		rig
197, " " "		200
213, Kane City Oil Co.		500
218, Gardner & Co.		dtill
223, Pet. Oil Co.		300
225, Verner & Farner, No. 2		drill
227, Geo. McCullagh		rig bld'g
239, Sherman Bros.		drill
241, Barnsdall Bros.		drill
253, Clark & Foster, No. 2		fish
253, " "	No. 3	900
256, R. E. Townsend		rig
258, Burrows & Co., No. 4		300
260, Lord & DeWolf		rig
264, Matthews, Boggs & Co.		(fish) 1800
262, Richards & Pickering		500
236, Wing & Co.		rig bld'g
271, Eaton & Bundy, No. 2		rig
276, L. H. Cowley, No. 5		800
277, Dr. Baker		drill
Salem, No. 11		200

Drilling 24
Rigs 19

Total 43

WEST BRANCH.

Stinson, Williams . . . . . rig
Stinson, Chapin & Co., No. 4 . . . . . drill
Cranmer, " " 6 . . . . . rig
Wagner, Bradley . . . . . drill
Gas Hollow, Heald, No. 2 600
" " " 3 . . . . . rig bldg
Crooker, Hazleton . . . . . rig
Emery, Kuntz . . . . . rig

KENDALL CREEK.

Melvin, P. C. L. & P. Co., No. 54 . . . . . rig
" " " " 55 . . . . . rig
Richardson, Smith . . . . . rig
Davis, Adams . . . . . rig
Buchanan, Anchor Petroleum Co . . . . . drill
" " " " . . . . . rig
Moore, P. C. L. & P. Co . . . . . rig
Mack, West . . . . . rig
Moore, Huff & Ege 250
" " . . . . . rig bldg
Dolloph, Tarbell & Co . . . . . rig
Fisher, Whedon . . . . . rig
Peck & Foreman . . . . . rig
Storms, Wight & Sowers . . . . . drill
Turner, Crow . . . . . rig
Turner, Timblin 800
Turner, Paggett . . . . . drill
Cornen, Peck & Freeman . . . . . drill
" " " . . . . . rig
Moore, Morse & Butt . . . . . rig bldg
Moore, Gillespie Bros . . . . . rig

FOSTER BROOK.

Tait, Tait . . . . . rig
McKelvey, Dewitt . . . . . drill
Baum, Richardson & Co . . . . . drill
C. B. & H., M. S. Howe & Bro . . . . . drill
" Lot 25, Treat & Porterfield . . . 1000
" " " " " . . . 600
" " " " " . . . rig
" Lot 31 " " " . . . rig
" Daniles . . . . . rig
" A. J. Coldren 800
" " . . . . . rig
" " . . . . . rig
" H. E. Pickett . . . . . rig
" Buzzle . . . . . sand
" Young & Co 250
" " 400
" Argua Bros . . . . . sand
" Seigle . . . . . rig
Clark, Hanna . . . . . sand

Drilling 20
Rigs 28

Total 48

SUMMIT, MARION AND RIXFORD.

Borden, Shear Bros. & Co. (fish) . . . . . 9 sand
" " " . . . . . 12 rig
" C. B. Whitehead, No. 1 . . . . . drill
Mather, " No. 7 . . . . . rig
Borden, Wallace & Lavens . . . . . drill
" " " . . . . . rig
Borden, Bowers & Howell . . . . . rig
Thurston, Judd & Glass . . . . . rig
Chambers, Hazelwood Oil Co . . . . . rig
Book, " " No. 36 . . . . fish
" " " . . . . . rig
" " " . . . . . rig
Patterson, Gregg, No. 5 1000
Schoonover, Schoonover . . . . . drilling
Cummings, Zimmerman . . . . . drill
Whitcomb, Hardly Able Oil Co. 800
Berger, Pemberton . . . . . rig
Cornen, Cornen, No. 16 400
" " No. 18 . . . . . drill

OIL VALLEY.

Hamlin, Daniels . . . . . rig
Duke, Dunn & Co. . . . . rig
" " " . . . . . coffin rig

STATE LINE.

Angell, Angell Oil Co . . . . . 6 rigs
Fullerton, " . . . . . 4 rigs
Borden, Forman & Lawton . . . . . 2 rigs
Angell, Hogan & Murphy 1800
" Johnson . . . . . rig
" Smith & Murphy . . . . . rig bldg
" O'Dell . . . . . rig
Barse, Downing 1600
" Union Oil Co . . . . . rig bldg
E. T. Co., Mitchell 500
" " 400
" Tait 1000
Borden, Smith & Jones . . . . . rig
" " " . . . . . rig bldg
" Forman . . . . . rig
" " . . . . . rig bldg
" Henne & Fertig . . . . . 2 rigs bldg

INDIAN CREEK.

Keatting, Forest Oil Co 250
Hamlin, " " No. 32 650
" " " No. 33 . . . . . rig
" Triangle Oil Co . . . . . drilling
" Boyne, Adams & Co . . . . . rig
H. Loup, Globe Oil Co 1300
Miles Loup, James O'Neill, No. 9 . . . . . drill
" " " No. 10 . . . . rig
Louis, Loup, Peck & Freeman, No. 27 . . . 850
Campbell, Follett Bros 100
Loup, Sloan & Downing, No. 2 200
Palmiter, Purtell Bros., No. 12 . . . . . rig
Pine lot, Eckerly . . . . . rig

MEEK'S CREEK.

Mercereau, J. L. McKinney & Co., No. 1 . 200
" " " " . . rig bldg
Gale, Curtis & Taylor, No. 5 . . . . . rig
" " No. 6 . . . . . rig
" Moore & Watson, No. 5 . . . . rig
" Thompson & Canfield . . . . . rig

FOUR-MILE.

McCartney, McCartney . . . . . rig
Donohue, Brown & Norris . . . . . rig
VanCampen, Quintette Oil Co., No. 20 . . . sand
" " " . . . . . rig
" " " . . . . . rig
Stevens, Dudley & Palmer 400
" Book & Rhodes . . . . . drill
VanCampen, George VanCampen . . . . drill
" " " . . . . . rig
" Rockaway 1600
" Brahany . . . . . rig
" George Chamberlain . . . . . rig
Buzzard, Waccie Oil Co . . . . . 4 rigs
" Davis . . . . . rig
Joe Waters, Howard & Baum . . . . . rig
Harbell, Coleman & Bell . . . . . drill
Strattuck, Curtis & McCormick, No. 6 . . . sand
" " " No. 7 . . . rig
" Eaton & Howe, No. 3 . . . 250
Hallender, Brown 1200
Garr, Curtis . . . . . rig
Joe Waters, Howard & Bain, fish 1400
Joe Waters, Gillespie . . . . . rig
Howard, Stowell . . . . . rig bldg
" Evans . . . . . sand
" " 1400
" " . . . . . rig bldg

Drilling 35
Rigs 62

Total 97

COLE CREEK AND BINGHAM ESTATE.

Bingham, lot 405, Forest Oil Co., No. 6 . . . 250
" " 404, " " 7 . rig bldg
" M. W. & H—W. W. Thompson . rig
" lot 265, Tucker & McCormick . . . rig
" " 387, P. T. & W. Kennedy . . . rig
G. & Van V. pur, Union Oil Co., No. 16 . . rig
" " " 17 . . rig
" " " 18 . . rig
" " " 24 . sand
" " " 25 . . rig
" " " 26 . . rig
" " " 27 . . rig
Brown & Keller, E. Duthil 1000
Bordell, Short Oil Company, No. 7 . . . . sand
Lot 488, Johnson & Union Oil Co., No. 25 b . rig
415, " " 113 . rig
492, " " 32 b sand
492, " " 36 b 830
493, " . . . . rig
493, " " 29 b 1700
409, J. L. McKinny & Co., No. 8 . . . 1600
409, " " 9 . . . rig
439, " . . . . . rig
572, G. V. Forman, No. 10 800
534, " " 11 . . . . . drill
573, " " 15 1000
534, " " 1 500
573, " " 17 . . . . . rig
407, Bennett & Quick . . . . . rig
Lot 453-4, Bayne, Fuller & Co., No. 42 . . . 500
453-4 " " 43 . . . 1800
453-4 " " 44 . . . 600
278-9, Cumulative Oil Co., No. 8 . . . . rig
468-9, Cu'tive Oil Co. & Eaton Bros. No. 5 1700
491, Forman & Union Oil Co., No. 8 . . 1400
491 " " 9 . . rig
417, " " 12 . . 1000
418, " " 14 . . rig
418, " " 15 rig bldg
" " " 13 rig bldg
Bingham, Mina Oil Co 500
" Trio Oil Co 500

Drilling 20
Rigs 22

Total 42

BIG SHANTY.

Bingham, Dent Oil Co., No. 17 1700
Dent, " " 7 . . . . near sand
" " " 14 1200
" " " 15 400
" " " 16 200
Bingham, Hertig, No. 6 1400
" Lot 93, Lockwood & McKevitt, No. 7 300
Sullivan, Waugh, Porter & Book . . . . rig bldg
" Mills & Mullen. No. 6 . . . . . drill
" " " " 7 . . . . . drill
" Book & Tait . . . . . rig
" " . . . . . rig bldg
" Lot 91, Union Oil Co., No. 16 . . . 1600
" " " " " . . . rig
" " " " " . rig bldg
Hamlin, Minard Run Oil Co., No. 11 1600
" " " 12 1200
Taylor, Mullen . . . . . sand
Tunungwant, Book . . . . . rig drill
Dent, Whitney & Wheeler, No. 9 500
" " " " . . . . rig
" " " " . . . . rig bldg
" " " " 10 250
" " " " 11 . . . . . drill
" P. C. L. & P., No. 23 . . . . . sand
" " " 24 . . . . . drill
" " " 25 . . . . . rig
" " " 26 . . . . . rig bldg
" Bowen (fish) 400

MOODY TRACT.

Moody Co., No. 79 1400
" 81 . . . . . rig
" 82 . . . . . rig bldg
" 80 1000
" 83 . . . . . drill
" 84 . . . . . rig bldg
" 56 Jennings, No. 4 . . . . rig
" 66 Hickery Oil Co . . . . rig
Bingham, 180, Hamlin & Rose, No. 2 1000

KINZUA.

Bingham, J. M. Tait 1700
" J. & T. Tait . . . . . rig
U. Oil Co., U. Oil Co., No. 32 1200
" " 33 . . . . . rig
Carter & Hurd, Carter & Hurd . . . . . rig
Parker & Hasson, Parker & Hasson 1600

VANSCOY SECTION AND SUGAR RUN.

English, Dew Drop . . . . . drill
Complete, Duke . . . . . rig
Richardson, Chapin . . . . . rig

MISCELLANEOUS.

Elk Co.. 3,655 W. T. W. Larson . . . . . rig
" Foster & Whipple . . . drill near sand
Wyoming, Mahopany Co . . . . . rig
Prentice Vale, Prentice . . . . . rig
Turtle Point, unknown . . . . . sand

Drilling 30
Rigs 22

Total 52

WARREN COUNTY.

CLARENDON.

Lot.	*Operator.*	*Depth.*
Lot 55,	Beatty	rig
77,	O. Hoffman, No. 2	rig bldg
77,	Joe Clinton	rig
77,	Wynkoop	rig
78,	Beatty, No. 16	400
78,	"	2 rigs
79,	M. H. Butler & Co., No. 2	drilling
79,	Marsh, Robinson & Kuhn	1000
80,	Theo. Barnsdall & Co	rig
80,	Winsor Bros., No. 7	rig 300
80,	" No. 8	rig
80,	D. H. Thayer, No. 2	rig
80,	May & Groves	sand
105,	Brinton & Co	rig
105,	Shugert & McLouth, No. 2, fishing	sand
10,	Fisher & Weaver	900
105,	Atkinson & Co., No. 5	rig
105,	Short, Oyster & Thornton, No. 5	200
106,	George Civen, No. 2	rig
107,	B. Malone, No. 3	sand
107,	Lowrey	rig
106,	Courath Bros., No. 3	drilling
106,	Archbald & McClure, No. 4, fishing.	200
106,	" " No. 5	500
Lot 108,	Grandin & Hague	rig
108,	Duke & Harris	rig
161,	Grandin & Hague	rig
161,	Meely Bros	drilling
498,	E. Eagan & Co., No. 1	600
498,	Pratt & Co	drilling
498,	Conway & Candy	300
498,	Stoughton	400
498,	George Given, No. 1	300
499,	Grosh, Hamshar & Co	drilling rig
499,	Merrill & Co., No. 2	400
499,	Taggart & Co., No. 2	rig
494,	E. Katz	rig
527,	Rockwell & Co.	rig 400
498,	Smith & Shemerhorn	rig
498,	Swamp Angel Oil Co	400
498,	W. Hopewell, No. 2, fishing	500
498,	" No. 3,	500
498,	" No. 4,	rig
528,	O'Connor & Reed	rig
528,	W. B. Ash, No. 1	200
528,	R. Cochran, No. 2	drilling
529,	Jamestown Oil Co., No. 2	drilling
529,	Schonblom & Co.	drilling
530,	Bradenberg & Co.	drilling
556,	Stevenson & Co.	rig
528,	Nickle, Munn & Co	drilling
528,	Geo. Marsh & Co	drilling
528,	Armstrong & Speer, No. 5	500
528,	" " No. 7	drilling
528,	" " No. 8	rig
557,	J. Bryan, No. 3	rig
646,	Jamestown Oil Co	1200
Bugbee,	J. Bryan	rig

GLADE.

Matson, Brown Bros . . . . . rig
Jackney, Jesse Johnson . . . . . drilling
Kerberger, Sargent & Co. . . . . drilling

SHEFFIELD.

Lot 368, Magee & Horton 1000
397, Clark & Armor, No. 4 . . . . . sand
407, Stewart, Emery & Co . . . . . sand
408, Wetmore & Co . . . . . drilling
408, " " . . . . rig bldg, rig, rig
408, Magee & Horton, No. 6 200
408, " . . . . . rig
409, Union Oil Co., No. 4 1000
438, Emerson, Shank & Co . . . . . rig
Williamson, Emery & McKinney . . . . . sand
Lot 212, Truby & Co . . . . . rig

FOREST COUNTY.

Tract 2,730, Reno Oil Co . . . . . rig
Balltown, May & Kelly 400
Tract 5,211, Tionesta Oil Co 200
Lot 41, Mainwaring & Co . . . . . rig bldg
Marienville, Vandergrift . . . . . drilling

Drilling 45
Rigs 37

Total 82

THE LOWER FIELD.

BYROM CENTER.

Middleton, Martin & Co. 600
D. R. Crawford, Porter & Phillips 600
" Steelsmith & Co. 400
" Rowley, Graham & Co, . . rig
A. Anderson, Trout Run Oil Co 1000
" Duncan & Newton 900
Miller, Adams, Stovey & Tash . . . . . rig
Grant, Grant Bros. & McElree 350
Robinson, E. K. Robinson 850
Sloan, Duncan & Dodd . . . . . rig
Ley, J. P. Crawford . . . . . rig
Emlenton, Crawford . . . . . drill

CLARION.

Edenburg, J. D. Callahan . . . . . rig
Updegraff, Unknown 200
Black, J. Irwin . . . . . rig
Call, Smith & Butler 600
Wentling, Wentling & Putnam . . . . . rig
Fillman, J. Fillman . . . . . rig
Weller, Laney Bros. . . . . rig
" Frier & Co., No. 2 . . . . . rig bldg
Richey Run, Moore & Co. 900

VENANGO.

Furnace Tract, Fisher Bros. 700
Brown, Wolf & Kugler . . . . . sand
McCalmont, P. McCalmont . . . . . drilling
Kauffman, A. Dale 600
Rouseville, John Hersh . . . . . drilling
Bully Hill, Geo. Robinson 400
Beichtel, Unknown 1000
McBride, McBride & Co., No. 3 . . . . . rig
Morrison, Oscar Wilde Oil Co. 700
Galey, Kugler, No. 4 . . . . . rig bldg

BUTLER AND ARMSTRONG.

Crawford, J. C. Widger & Co. 1000
Brady's Bend Iron Co., Hunter & Cummings 1150
" " " " rig
Hammel, Simcox & Myers 1200
Dufford, K. McBride 1000
Miller, McConnell & Morrisy 300
Bell, A. Shidemantle 800

Kelly, Task & Walls 800
Clarke, A. Crittenton & Co. . . . . rig

Drilling 26
Rigs 13

Total 39

ALLEGHANY.

ALMA.

Lot 1, Empire Gas Co 600
1, Phillips Bros 400
1, Wesster & Co . . . . . drill
4, Wellsville Oil Co 600
4, Bellaney & Elliott 600
17, O. P. Taylor, No. 10 300
17, " " 11 600
17, Scott & Elliott . . . . . rig
17, J. L. Lewis 300
17, Workmen & Gaskell . . . . . rig
18, Harper & Breckenridge 700
18, Duke & Morton . . . . . rig
23, Anderson & Otis, No. 16 . . . . . sand
23, " " 18 600
23, " " 19 300
23, " " 20 . . . . . rig
23, " " 21 . . . . . rig
23, Dow & Browning, No. 2 . . . . rig bldg
38, William Chambers . . . . . rig bldg
40, Morse & Williams, ... rig
40, " " 5 1000
40, " " 6 200
40, " " 7 . . . . . rig
40, Duke & Morton, No. 17 500
40, " " 18 . . . . . rig
40, " " 19 . . . . . rig
40, Donnell & Co., No. 2 800
53, Elliott & Terry . . . . . sand
121, Hefferman & McDonald, No. 6 . . . 400
121, " " " 7 . . . rig
143, Penall & Co., No. 2 . . . . . rig bldg
143, Elliott & Doty . . . . . rig
143, Ira W. Shirley . . . . . rig bldg
144, Cole & Blackman . . . . . rig
144, Grunnell & Chandler . . . . . rig bldg
144, Bunker & Fitzsimmons . . . . . drilling
144, Chambers . . . . . rig
144, Grunnell 1000

Drilling 19
Rigs 18

Total 37

WIRT.

Lot 17, Taylor & Humphries, No. 4 200
17, " " " 5 . . . . rig
17, " " " 6 . . rig bldg
17, Koch Bros., No. 4 . . . . . rig
17, Anderson & Gamble 900
17, " " . . . . . rig
25, Option Oil Co. 900
25, Fertig Bros 500
25, " 200
25, " 100
25, Unknown . . . . . rig bldg
25, L. Whitney 300
25, " . . . . . rig bldg
25, Harry White, No. 3 . . . . . rig
25, Allen & Taylor . . . . . rig
25, Coast & Foreman . . . . . rig bldg
25, Fertig & Co . . . . . rig bldg
25, Howard & Baum 200
25, Mark Shannon, No. 5 1200
25, " " 6 500
25, " " 7 200
25, " " 8 . . . . . rig bldg
25, Kasson Oil Co. No. 14 1000
25, " " 15 100
25, " " 16 . . . . . rig
25, J. C. Leonard & Co. 900
25, " " 700
25, " " . . . . . rig bldg
25, Rue & Shumaker . . . . . rig
25, Fox & Barber . . . . . rig
25, Manhattan Oil Co. 400
25, " " . . . . . rig bldg
33, Patsy & Bliss, No. 7 500
33, " " No. 8 . . . . . rig
33, Knox Bros., No. 7 . . . . . sand
33, " . . . . . rig
33, Dr. Pitts 300
33, " . . . . . rig
33, Thompson, Mattison, & Co 1100
33, Allen & Taylor, No. 7 . . . . . rig
33, Luce & Gable 600
33, Wirt Oil Co. 500
33, " . . . . . rig bld'g
33, Murdock & White 200
33, Alfred Oil Co. 800
41, Evans & Griffin 200
41, Finnegan & Nelson . . . . . rig
41, Flanegan & Co 1000
41, Cotrell & Co . . . . . sand
41, Bliss & King 900
41, Huff & Anderson 400
41, " " . . . . . rig
41, Gilbert Farm Oil Co . . . . . sand
41, H. W. Davis & Co. 950
Lot 41, H. W. Davis & Co. . . . . rig
41, Wellman, Miner & Pitts 400
41, " " . . . . rig bldg
49, Painter Bros 800
49, Ward & Gilligan . . . . . rig
49, Finnegan 600
57, E. W. Coleman 400
49, Dr. Whipple, No. 4 700
49, " No. 5 . . . . . rig
49, A. A. Richardson . . . . . rig
49, " " . . . . . rig bldg
49, Smith & Salesbury 200
49, Manhattan Oil Co. & McNulty . . . 800

Drilling 38
Rigs 29

Total 67

BOLIVAR.

5, S. D. Karns 100
5, Williams, Morse & Brown 100
6, Wolf & Williams, No. 3 500
6, " " No. 4 . . . rig bldg
6, Love & Penzer 100
6, " . . . . . rig
8, Empire Gas Co. 800
8, " " . . . . . rig
23, Johnson & Conroy . . . . . rig
24, Bottom Bros . . . . . rig
24, Mooney & Galey, No. 6 100
24, " " No. 7 . . . . . rig
24, " " No. 8 . . . . rig bldg
24, Empire Gas Co., No. 6 . . . . . rig
24, " " No. 7 . . . . . rig
24, Christie & Nichols 500
24, Christie Bros. . . . . rig
24, Milligan, No. 3 800
24, Bartlett & Johnson 200
24, " . . . . . rig
25, Wilson & Whitcomh 1000
31, J. H. Shrives & Co. . . . . sand
31, " " . . . . . rig
31, Fisher Bros. . . . . rig bldg
32, Short & Son, No. 2 . . . . . sand
32, " No. 3 . . . . . rig
32, Hardison & Collins, No. 15 200
32, " " No. 16 . . . . rig
32, T. Hacket, No. 6 500
32, " No. 7 . . . . . rig bldg
32, " No. 8 . . . . . rig
32, " No. 9 . . . . . rig bldg
32, Brow & Reed, No. 4 200
32, " No. 5 . . . . . rig
32, " No. 6 . . . . . rig bldg
22, Duke & Briody, No 14 900
32, " " No. 15 600
32, " " No. 16 800
32, " " No. 17 200
32, " " No. 18 . . . . . rig
32, " " No. 19 . . . . rig bldg
32, " " No. 20 . . . . rig bldg
32, John Chochran, No. 6 . . . . . sand
32, " No. 7 400
22, Bradley & Green, No. 7 400
32, Smith & Co., No. 8 200
32, Black & George, No. 8 200
32, " No. 9 . . . . . rig
32, " No. 10 . . . . rig bldg
32, Wm. Sawyer, No. 4 600
32, " No. 5 . . . . . rig
37, J. Bryan & Co. . . . . rig bldg
38, Fisher Bros. 500
39, Stevens & Coyle 1100
39, " 100
39, " . . . . . rig
39, " . . . . . rig bldg
39, A. A. Richardson, No. 2 . . . . . sand
39, " No. 3 300
39, " No. 4 . . . . rig bldg
39, Whitney & Good, No. 2 . . . . . rig
39, " No. 3 . . . . rig bldg
39, Gillesbee & O'Donnell, No. 2 200
39, " No. 3 . . . . rig
39, C. H. Emmerson & Co., No. 2 . . . 500
39, " " No. 3 . . . 400
39, " " No. 4 . . . rig
39, " " No. 5 . rig bldg
39, " " No. 6 . rig bldg
39, H. O'Neil, No. 4 . . . . . rig
39, " No. 5 . . . . . rig bldg
39, H. P. Malone, No. 4 500
39, " No. 5 500
39, " No. 6 . . . . . rig
39, " No. 7 . . . . . rig bldg
39, Mallory, Treat & McNulty 400
39, Wellman, Miner & Pitts 400
39, " " . . . . . rig
38, " " . . . . rig bldg
39, Weiser & Kinkaid, No. 2 . . . . . sand
39, " " 3 200
39, " " 4 . . . . . rig
39, " " 5 . . . . rig bldg
39, Lapartte Oil Co., No. 4 . . . . . sand
39, " " 5 500
39, " " 6 200
39, " " 7 200
40, Meldrum Oil Co., No. 9 . . . . . sand
40, " " 10 500
40, " " 11 . . . . rig bldg
40, Anderson & Humphrey 300
40, " . . . . . rig
Lot 40, Anderson & Humphrey, ... rig
40, McCalmont Oil Co., No. 8 . wells drilling
40, " " 11 . . . . rigs up
40, B. F. Palmer, No. 5 . . . . . rig
40, " " 6 500
40, " " 7 400
40, " " 8 300
40, " " 9 . . . . . rig
40, " " 10 . . . . . rig
40, W. H. Palmer . . . . . 2 rigs bldg
40, Forgie Bros., No. 4 200
40, " " 5 . . . . . rig
40, " " 6 . . . . . rig bldg
47, Manhattan Oil Co., No. 3 . . . . . sand
47, " " 4 . . . . . rig
47, A. J. Thompson, No. 1 100
47, " " 3 . . . . . rig
47, " " 4 . . . . . rig
47, " " 5 . . . . rig bldg
47, " " 6 . . . . rig bldg
47, J. Varney No. 7 400
47, " " 8 . . . . . rig
47, " " 9 . . . . . rig
47, " " 10 . . . . . rig
47, " " 11 . . . . . rig bldg
47, Clarion Oil Co. No. 7 . . . . . rig
47, " " " 8 . . . . . rig
47, " " " 9 . . . . . rig
47, " " " 10 . . . . . rig
47, " " " 11 . . . . . rig bldg
47, Moriarity & Co. No. 4 600
47, " " " 5 400
47, Lafayette Oil Co. No. 4 . . . . . sand
47, " " " 5 500
47, " " " 6 200
47, " " " 7 200
47, Hefferman & Hanley 200
47, " 300
47, " 200
47, " . . . . . rig
47, Brawley Bros. No. 5 300
47, " " 6 100
47, " " 7 . . . . . rig bldg
48, Manning & Co. No. 2 . . . . . drilling
48, " " 3 . . . . . rig
48, Smith & Zeigler No. 6 . . . . . rig
48, " " 7 . . . . . rig
48, " " 8 . . . . . rig
48, Thompson, Matson & Wallace . drilling
48, " " " . . . . rig
48, Larry Blackhall 500
48, F. W. & A. B. Weiser No. 5 600
48, Steele & Plummer No. 3 300
48, C. J. Ahner & Co. 200
48, McCalmon Oil Co. 500
48, " . . . . . rig bldg
48, A. W. Nelson & Co. No. 4 500
48, " " 5 300
48, " " 6 . . . rig bldg
50, Workman, Gaskall & Scoville . . . . rig
55, Whitney & Good . . . . . rig
55, Gaskall & Gillespie . . . . . rig
55, A. J. Thompson No. 1 200
55, " " 2 . . . . . rig
55, Stock & Keeler . . . . . rig
55, Smith & McCracken 250
55, " 200
55, " 100
55, " . . . . . 2 rigs
55, McCracken Bros. & Ellison No. 4 . . rig
55, " " " 5 . . rig
55, Kneelands & Connelly 400
55, " . . . . . rig bldg
55, Kinkaid & Morton 800
55, " . . . . . rig bldg
55, Stratton & Wilson 200
55, Rowley Bros. . . . . rig
56, Zeigler & Smith No. 6 100
56, " " 7 300
56, " " 8 . . . . . rig
56, " " 9 . . . . . rig bldg
56, Anderson & Humphrey No. 4 . . . 900
56, " " 5 . . . 350
56, I. L. & W. P. Haldeman 800
56, " 500
56, Hamlin & Rose . . . . . 2 drilling
56, " . . . . . 2 rigs
56, McCalmont Oil Co. . . . . sand
56, " " 1000
56, " " 600
56, " " 400
56, " " 200
56, " " . . . . . 5 rigs
62, Book & Rhodes . . . . . rig
63, J. T. Cooper & Co. No. 4 . . . . . rig
63, " " 5 . . . rig bldg
63, J. S. Cooper & Co. No. 2 . . . . . rig
64, Wellington Smith No. 5 900
64, Dyer & Whitnall No. 4 100
64, Armor & White No. 12 400
64, " " 13 . . . . . rig
64, " " 14 . . . . . rig
64, Anderson, Greenlee & Alshouse No. 6 1300
64, H. & W. Hardison No. 4 200
64, Forman & Ballard No. 6 900
64, " " 7 100
64, Hoover & Thompson No. 6 . . drilling
64, " " 7 . . . . . rig
64, " " 8 . . . . . rig
64, " " 9 . . . . . rig
64, " " 10 . . . . . rig
64, " " 11 . . . . . rig
64, " " 12 . . . rig bldg
64, John Cornwall No. 3 600
64, " " 4 . . . . . rig bldg

Lot 64, Reid & Kervin No. 3 1100
64 " " 4 . . . . . rig
64, Russell & Nutting No. 3 600

Drilling 112
Rigs 123

Total 235

GENESEE.

Lot 6, Sage & Streeter . . . . . rig
7, J. G. Haymaker . . . . . rig
7, A. P. Tanner 500
7, Genesee Oil Co. 550
8, Hays, Knox & Co. No. 4 . . . . . rig
8, " " 7 . . . . . rig
8, " " 6 fishing . . sand
8, Merrill, Perrin & Co. 400
8, " 600
8, " . . . . . 2 rigs
8, J. O. Johnson & Jones No. 4 500
8, H. J. Morton & Co. No. 14 800
8, " " 16 . . rig bldg
8, " " 17 . . . . rig
8, " " 18 1000
8, " " 19 800
8, Bussell & Urquhart No. 3 100
8, J. C. Smith & Son No. 4 400
8, I. Willets . . . . . 7 wells drilling
8, " . . . . . 3 rigs
8, " . . . . . rig bldg
16, G. S. Bussell 600
16, " . . . . . rig bldg
16, Carlin Bros. & Golden No. 2 300
16, " " 3 . . rig bldg
16, Jones Bros. No. 3 1100
16, " " 4 400
16, Reid & Kervin . . . . . rig
16, St. Joe Oil Co. 400
16, " . . . . . rig
14, Weiser & Dodge . . . . . drilling
16, Wilson Bros. . . . . rig bldg
16, Morrison & Bennett . . . . . rig
16, D W. Canfield No. 3 200
19, Daggett Oil Co. 600
16, " 300
16, " 300
16, " . . . . . 2 rigs bldg
16, Wheeler & Galey Bros. No. 6 300
16, " " " 7 . . . . rig
16, A. P Tanner No 4 100
16, Vandergrift & Miller 500
16, " " . . . . . rig
21, Wells & Cassidy 100
21, Willett & Cranston . . . . . rig
23, A. J. Gartland . . . . . rig
23, Coss Bros. 1000
24, R. R. Armor 600
24, Willett & Cranston, shut down . . . 900
29, " No. 2, fishing . . 1500
29, " " 3 800
29, " " 4 . . . . . rig
30, Duor & Roach 1000

Drilling 38
Rigs 25

Total 63

CLARKSVILLE.

Lot 1, Knox Bros. No. 2 . . . . . rig
1, Unknown . . . . . rig bldg
9, Empire Gas Co. . . . . drilling
9, " No. 5 . . . . . rig
17, K. Brett . . . . . rig
18, Austin & Co. 900
33, J. O. Johnson 200
9, Book & Rhodes . . . . . 2 rigs bldg

SCIO.

Lot 2, Nameless Oil Co. . . . . drilling
2, Wheeler & Co. . . . . drilling

Drilling 5
Rigs 6

Total 11

SUMMARY.

Completed Wells.

	Wells.	Production.	Average.	Dry.
Tuna Valley, East Branch, West Branch	21	218	10.38	1
Quintuple Tract	11	142	12.90	—
Kendall Creek, Foster Brook, Summit, Marion and Rixford, State Line, Indian Creek, Meek's Creek, Four Mile, Kinzua, Big Shanty, Moody Tract, Cole Creek & Bingham	27	326	12.07	—
	22	285	13.00	—
	36	750	20.00	—
Miscellaneous	4	600	.00	4
TOTALS	121	1,701	14.05	5
Totals January	149	2,119	14.20	4
Decline, February,	28	418	.15 inc.	1

MIDDLE AND LOWER FIELD.

Clarendon, Sheffield, Lower Field	32	363	.11	—
	17	104	6.11	3
Totals	49	467	9.53	3
Totals January	46	394	8.00	7
Increase, February	3	73	1.53 dec.	4

ALLEGANY FIELD.

Bolivar	98	2,372	23.95	1
Genesee	26	531	20.42	—
Clarksville, Scio	8	56	7.00	3
Alma	16	215	13.42	—
Wirt	41	980	23.80	—
Totals	189	4,154	21.97	4
Totals January	162	3,914	24.16	2
Increase February.	27	240 dec.	2.19 inc.	2

Drilling Wells.

	Drilling.	Rigs.	Total.
Tuna Valley, East Branch, West Branch	24	18	42
Kendall Creek, Foster Brook	20	28	48
Summit, Marion & Rixford, Oil Valley, State Line, Indian Creek, Meek's Creek, Four Mile	35	62	97
Cole Creek and Bingham	20	22	42
Big Shanty, Moody Tract, Kinzua, Miscellaneous	30	22	52
TOTALS	129	152	281
Warren	45	37	82
Lower Field	26	13	39
Totals,	200	202	402

ALLEGANY FIELD.

Alma	19	18	37
Wirt	38	29	67
Bolivar	112	123	235
Genesee	38	25	63
Clarksville, Scio	5	6	11
TOTALS	212	201	413
Totals, January	191	209	400

Increase Drilling February 21
Decrease Rigs February 8

Total increase February over January 13

	Drilling.	Rigs.	Total.
GRAND TOTALS	412	403	815
Grand Totals, Jan.	420	465	885
Decrease, February	8	62	70

THE OUTLOOK.

THE McKean district continues to decline not only as regards daily yield but also in volume of operations. The advance in the price of oil which took place about two months ago occasioned the erection of many rigs, which now stand idle awaiting a reaction in the market, which has gone downward, contrary to the expectations of the most level-headed of the producing fraternity. It is perhaps the best thing that could transpire for the business at this time. It is shown by the figures given elsewhere that the total yield of the region, notwithstanding the large increase which occurs from month to month in the Allegany field, continues to depreciate. The total decline for February was not so great as for January, however. The Allegany field continues to act as umpire of the game, and which ever way it nods victory perches in that direction. It gave us 189 new wells during February, and promises to enlarge upon this number in March. It must very soon reach its greatest altitude, unless new and rich territory is added, and thereafter it will require a large number of wells each month to sustain the daily yield.

The demand continues much greater than had been expected by the trade, which would indicate a fairly successful year in the matter of uses and consumption of the article. It is true the large stocks, which are now over 26,000,000 barrels, are somewhat burdensome, but when considered in the light of a largely augmented demand, and largely increased facilities for handling, manufacturing and transportation, and the fact also that there is but little oil above ground more than would be consumed in one year, this burthen grows lighter immediately. A heavy interest on loans and a large percentage for storage have combined to force the speculative element backward, and, as a consequence, prices have fallen.

THE Phillipps Bros., who were responsible for the Bullion development in Venango County, in 1877, are taking quite an active part in the Allegany, N. Y., field. Their first purchase amounted to about $50,000 worth of good territory on lot 8, Genesee.

THE ALLEGANY FIELD.

THE map which will be found on last page represents the Allegany field as outlined by the drill at the present time. The heavy shade of red represents the richer portions of the territory; the next lighter, the medium, and the third, or lightest shade, the territory upon which small wells only can be obtained. Each of the squares contains 360 acres of land, and any person capable of solving a simple problem of addition, can figure out for himself the extent of the areas and the amount of drilling yet to be done before they shall have been punctured completely. There are now 864 producing wells, the greater part of which will be found located on the inner shade or richer portions of the field. The wells here have been, and are, quite productive. On lot 32, Bolivar, for instance, forty wells averaged, during January, twenty-seven barrels each, taking the oldest well on the lot into the account. Again, on lot 8, Genesee, eight or ten wells averaged forty barrels each for the same period. It is a solid fact, worthy of note, that the wells of this field hold up in daily yield superior to those of any other district, taking their third-day gauge as a standard.

The point of the map at the southwest, in Genesee, indicating light territory, covers a large tract that will hardly bear drilling at the present time. The developments, however, warrant us in including that upon which wells are liable to be drilled some time in the future. At the present prices for oil it is not to be presumed that operations in the latitude will be extensively conducted. Very small wells only can be looked for, and an occasional dry hole. Just now the result of a well on lot 14 is anything but promising, though at this date, February 6th, it has not been shot. But from all appearances it is either very light or entirely dry.

During the month of February operations were pushed southward in Bolivar, nearly a whole square, taking in a portion of lot 38 and placing that which was considered doubtful on 39 and 47, and a portion of 46, within the range of fairly remunerative territory. This was the only important result of the month's business: 189 wells were completed, and there was no diminution in the volume of operations. In the first number of the AGE we gave an estimate, by sections, of the amount of territory at that time defined. The footings showed that there were about 200 acres of drillable territory and with the exception of the slight extensions along the south side, above referred to, the situation has not materially changed. Of course it must be remembered that all of this is not of the class that will warrant drilling at present prices. During February it will be seen more than two squares at five acres to one well were completely absorbed, and doubtless the same thing will occur during March.

The gas deposits are nicely outlined, so that the reader can comprehend at a glance what the Allegany field is composed of. In a table printed elsewhere, the growth of the field is plainly shown, and also the quantity produced daily during the month of February.

It may not be generally known to the outside world how and in what manner this important development came to be made. For this purpose we have secured a correct portrait of the discoverer.

The above cut very correctly represents the gentleman who is responsible for the Allegany County oil development. He is termed by the *Oil Echo*, in which paper the picture first appeared, as the Col. Drake, of that important oil field. He is even more than that; for there are those who dispute the right of Col. Drake to the honor or credit of first disclosing the wondrous oil deposit of Pennsylvania. But there are none to dispute Mr. O. P. Taylor's right to this distinction in Allegany. A history of Mr. Taylor's adventures, trials and difficulties in his search for the hidden treasures he believed existed there would fill a good-sized magazine alone. When the proper time therefore arrives, the complete history will appear in the AGE, as a certain portion of each number is devoted to that particular purpose. Mr. Taylor's efforts to overcome all obstacles and secure the prize of success, were greater than most men would care to exert, and show him to be a man of indomitable will and

extraordinary pluck. Mr. Taylor was a Virginian by birth, and took an active part in the struggle of the South for independence. At the close of the war he returned to Allegany County, where he had resided for some years prior to the beginning of the contest. He was schooled and graduated at the Genesee Seminary, Genesee County, N. Y. After his return, as stated, he engaged in the manufacture of cigars at Wellsville.

When the oil fever reached the northern field in 1877, it spread eastward, stopping at Wellsville. Mr. Taylor, who theorized somewhat on belts by mountain ranges was impressed with the importance of testing Allegany County for the precious liquid. In 1878, he succeeded in persuading a number of Wellsville people to embark in the oil business, and, as a result, a well was drilled on lot 26, Town of Alma. The well was a failure, and some of the company became disheartened, of course, and withdrew further aid. But Mr. Taylor felt encouraged to proceed with other tests, as by the first he had demonstrated the fact that sand rock existed, as well as small quantities of oil at least. In the summer of the same year he succeeded in having another test made, 2¾ miles north of the first, and on lot 118, same township. In due course of time this well was finished; a good depth of rock was found and some oil. It would have made from two to three barrels a day. Mr. Taylor offered the well and one hundred acres to the people of Wellsville if they would furnish the machinery and appliances for pumping it, which they refused, saying that the well was purposely spoiled in the interest of Bradford parties. And many believe it to this day. Taylor implored them to take it, but it was no use.

He then determined upon making another test in the neighborhood, and sent men to remove the casing from the last venture. The natives, however, arose *en masse* and drove the men away. He then dispatched an officer, under whose armed protection the casing was drawn.

As usual, when the water was permitted to fall into the well what little oil had oozed into the hole was thrown out with great violence.

This caused a triumphant shout from the rural spectators, and the officer, discovering the oil, returned to Wellsville in great haste, to notify Mr. Taylor of his grand mistake in abandoning the well. But, as he understood the circumstances, he paid no attention, and proceeded with preparations for a third venture, 2½ miles north of the last one. This was also a failure.

Next he procured leases in the Town of Scio, some distance northeast of his latest venture, and, after some very tough struggles with poverty and want of backing, finally succeeded in obtaining "Triangle No. 1," a well of six or eight barrels capacity. This was the turning-point in his career. Those from whom he could not borrow a dime now came to his relief with dollars, and from that time on his successes in the field have been numerous. In trying to ascertain the outline of the field, he has since that time obtained a few dry holes: as, for instance, on Brimmer Brook, north of Triangle, lot 37, Bolivar, and lot 6, Alma. Triangle No. 3, a short distance southwest of No. 1, was completed July 4th, 1880, and produced ten barrels a day for a month. After the completion of the duster, on lot 37, Bolivar, he organized a company, with Wm. R. Allen, Lester Cottrell and J. Bliss, of Richburg, as associates, and sunk the old Richburg Well, which was completed the 6th of May, 1881, and opened to the gaze of an astonished people a new and important development. From this in reality sprang the 13,200 barrels a day now rising to the surface of Allegany County.

It is related of Mr. Taylor that while drilling his third venture, in Alma, he had occasion to remove tools to Bradford for repairs, that being the nearest point at which the work could be accomplished. He was out of money, even to pay the freight. He sought assistance in Wellsville, but it seemed that his last friend had departed. On going to his house he was informed by his wife that she had the money, having sold her watch for the purpose of procuring the necessaries of life. He got it, and the well was completed, and success attained. (Half that well and all others should be Mrs. Taylor's.)

Thus, brains, pluck, and perseverance, won for Mr. Taylor a sure and lasting fortune.

Oil Region capitalists are now leasing large bodies of land in Kentucky and Eastern Tennessee. The idea has for many years capered around the cranium of producers that the Southern region contains large quantities of petroleum, which can be obtained any time after transportation facilities have been provided.

The great McKean and Cattaraugus district is declining in production; but it still produces twice as much oil as all other fields put together, and possesses as much defined territory yet to drill as all other fields. The great northern field is therefore a long way from becoming a sickly corpse.

TABLE SHOWING TOTAL PRODUCTION OF CRUDE PETROLEUM IN PENNSYLVANIA AND NEW-YORK OIL FIELDS, AND CONSUMPTION.

From 1859 to 1881, Inclusive.

Year.	Oil Creek Division. Bbls.	Pithole District Bbls.	Central All'g'ny Divis'n. Bbls.	Butler, Armstr'g & Lower Allegany Bbls.	Tid'ute and Fagundas District Bbls.	Clarion Division Bbls.	Bradford Division Bbls.	Bullion District Bbls.	Warr'n Div. Bbls.	Beaver Div. Bbls.	Alleg. Co., N. Y., Div. Bbls.	Yearly Total. All Districts. Bbls.	Consumption. Bbls.	Yearly Average Price.
1859	2000	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	2000	500	20.00
1860	500000	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	500000	300500	9.60
1861	2113609	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	2113609	1280000	.49
1862	3056690	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	3056690	1472000	1.05
1863	2611309	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	2611309	1992800	3.15
1864	2216109	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	2216109	1946620	9.87½
1865	1585200	912500	. . .	. . .	20500	. . .	. . .	. . .	. . .	. . .	. . .	2518200	2238610	6.59
1866	2302700	1095000	. . .	. . .	490000	. . .	. . .	. . .	. . .	. . .	. . .	3887700	2574401	3.74
1867	2393300	814000	. . .	. . .	839900	. . .	. . .	. . .	. . .	. . .	. . .	4047200	2960561	2.41
1868	2672617	445500	26000	. . .	729000	. . .	. . .	. . .	. . .	. . .	. . .	3873117	3404645	3.62½
1869	3462500	365000	22500	45000	535000	. . .	. . .	. . .	. . .	. . .	. . .	4430000	3716341	5.63¾
1870	2745528	173585	713150	918644	723838	. . .	. . .	. . .	. . .	. . .	. . .	5274745	4562642	3.89
1871	2040263	182054	1083386	1091458	697887	310293	. . .	. . .	. . .	. . .	. . .	5405341	5178038	4.34
1872	1429685	145065	881140	2658080	847199	829079	. . .	. . .	. . .	. . .	. . .	6290248	5954742	3.64
1873	1094389	119864	851934	4402563	895983	2526231	. . .	. . .	. . .	. . .	. . .	9890964	7847953	1.83
1874	734247	55770	564978	5160265	373325	3921267	. . .	. . .	. . .	. . .	. . .	10809852	7875145	1.17
1875	504639	35130	343905	4712702	351407	2821214	18509	. . .	. . .	. . .	. . .	8787506	9256416	1.35
1876	611884	37450	333640	4755623	354284	2377700	382768	64220	51337	. . .	. . .	8968906	10414877	2.56¼
1877	734858	60380	474262	5431072	312700	3021120	1465451	1306342	151371	62085	. . .	13019641	11977107	2.42
1878	686948	60000	363710	4552815	308780	2276408	6482400	505265	108300	92490	. . .	15437116	13783672	1.19
1879	389400	36500	258652	2876787	227900	1438342	14268945	289591	45550	82100	. . .	19913767	16851222	.85⅞
1880	335342	36500	166143	1737969	168542	868984	22343202	146672	91655	102956	. . .	25997965	18228905	.94½
1881	293504	31938	145374	1394706	146474	844442	22817975	128338	438000	102956	607106	26950813	21263740	.85¾
	34516721	4706236	6228774	38737684	7022719	21235080	67779250	2440428	886213	442587	607106	184602798	154080437	3.92¼

RECAPITULATION.

Production by Fields.—1859 to 1881, Inclusive.

Oil Creek Division, including Shamburg, Pleasantville and Enterprise,	34,516,721	Clarion County,	21,235,080
Pithole Division, including Henderson, Morey and Ball Farms,	4,706,236	Bradford Division, including Elk County,	67,779,250
Central Allegany, including Scrubgrass and West Hickory,	6,228,774	Bullion Field,	2,440,428
Butler and Armstrong Counties, Lower Allegany Division,	38,737,684	Warren, Stoneham and Clarendon,	886,213
Tideoute Division, including Economite, Henderson, Farms, etc.,	7,022,719	Beaver (Smith's Ferry) Division,	442,587
		Allegany Division,	607,106
		Total all Divisions, Production,	184,602,798
		Total Consumption,	154,180,437
		Difference,	30,422,361

This difference includes, of course, all available stocks on hand, all sediment and worthless surplus, and the amount estimated for shrinkage, which would reduce the available stocks to the figure given elsewhere.

This table is made to show the amount of oil saved and used. It differs but little with the first production table published in the AGE, and was compiled by a producer who possesses valuable records.

STATE VS. STANDARD.

THE case of the State of Pennsylvania vs. The Standard Oil Co. was argued last week in the Court of Common Pleas, at Harrisburg. This action was instituted to recover $3,145,541.64, which sum is claimed for taxes due the plaintiff on the capital stock of the Company from 1872 to 1880 inclusive. The case has attracted considerable attention for some time, and was argued by able counsel on both sides. Attorney-General Palmer, assisted by Hon. Lyman D. Gilbert and Deputy Attorney-General Snodgrass, prosecuted the case; while Judge Rufus P. Ranny, of Cleveland, M. E. Olmstead, of Harrisburg, S. C. T. Dodd, of New-York, and D. T. Watson, of Pittsburg, performed the duty of defending. It was charged by the prosecution that the defendant, as an incorporated body, though of another State, was practically liable to a tax on their capital, which was largely used in this State in the conduct of the business of the corporation, and it received its supplies entirely from this State. It was shown by the defendant that "In 1872, it bought oil in the State to the extent of $425,000, and its dividends were over thirty-seven per cent. In 1873, it owned in the State interests in unincorporated partnerships to the extent of $23,333, and declared dividends of fifteen per cent. In 1874, the ownership in unincorporated partnerships amounted to $739,250,

and it declared a dividend of fifteen per cent. In 1875, it owned interests in unincorporated partnerships in the State, amounting to $952,500, and declared a dividend of fifteen per cent. In 1876, its interests in partnerships in the State amounted to $1,333,500, in addition to which it owned stock in Pennsylvania corporations to the amount of $2,135,000, and declared a dividend of fifteen per cent. In 1877, it owned in the State unincorporated partnership interests amounting to $975,100, and stocks of Pennsylvania corporations to the value of $3,500,000, and declared a dividend of over one hundred per cent. In 1878, it reduced its interests in unincorporated partnerships in the State to $12,500, while it owned stock in Pennsylvania corporations to the extent of $3,500,000, and in limited partnerships to the value of $494,900, and declared a dividend of twenty-five per cent. In 1879, its property in the State was the same as in 1878, and it paid a dividend of one hundred per cent. In 1880, "it had no permanent investment," but bought oil to the extent of $350,000.

The company started out with a capital stock of $1,000,000, which was increased, in 1872, to $2,500,000, in 1875, to $3,500,000. No change has been made in the nominal capital stock since 1875, but the undivided profits have increased the actual capital to an acknowledged sum of $25,000,000 in 1880, but which is now estimated at $35,000,000. In addition to this undivided profit, over $10,000,000 has been declared in dividends in eight years.

It was urged by the defendant that, as a corporation resident of another State, its capital was not liable to taxation in Pennsylvania, as it had never received from the latter any special authority to transact business therein. The company claims to own no property outside the State of Ohio. The decision has not yet been rendered in the case. While the justice of the tax levied, and the law supporting it may be proper, the equity of the matter would seem to be opposed to the action of the State authorities.

The statute of Pennsylvania imposes a tax upon the capital stock of corporations doing business within the State. Since its enactment in 1868 the law has been understood to apply in the case of companies incorporated in other States but doing business in Pennsylvania only to the capital stock invested or used in the Commonwealth. New-York has a similar law, passed last year, and this construction has been placed upon it by the State Comptroller. The question raised by this case involves many millions of dollars, and in case the defendant is compelled to pay the amount claimed there would certainly be just cause for alarm to other corporations who are similarly situated; as in the case, for instance, of a railroad company incorporated in another State and receiving supplies for transportation from Pennsylvania. The express companies would also come in under the same rule of taxation, or any other corporation whose business extended beyond the bounds and into the territory comprised in the commonwealth. The Standard Oil Company or any other company should be taxed the same as an individual, on the profits arising from the business it transacts within the State, and on all property it is known to possess within the State, but beyond that the way is not clear.

RUNS, DELIVERIES, STOCKS.

Table showing the January and February Pipe Line Runs and shipments, with stocks, on February 28th.

District.	Receipts, Pipe.	Barrels, Jan. 31.	Barrels, Feb. 28.
Bradford	United	1,731,800.00	
Tidioute & Titus'e,	"		
Lower Country	"		
Warren	"		
Monongahela	"	252,525.23	
Total	"	1,984,325.23	2,062,742.98
Bradford	Tidewater	198,125.37	231,162.94
Warren	Union Oil Co.	31,576.26	32,843.01
Titusville	Octave Oil Co.	4,680.66	5,005.48
Oil City	Charley Run	379.08	553.23
Shaffer	Shaffer Run	532 00	845.00
Franklin	Franklin Pipe	7,246.34	6,134 78
Total all Lines		2,226,864.94	2,339,327.42
Average per day January			71,834.35
Average per day, February			83,547.40
Average per day December			81,083.55

Deliveries.

District.	Pipe.	Barrels.	Barrels.
All Points	United	1,547,945.23	1,601,191.43
Warren	Union Oil Co.	13,822.33	19,223.31
Titusville	Octave	4,304.23	4,000.00
Franklin	Franklin Pipe	8,372.63	3,437.34
Shaffer	Shaffer Run	367.70	
Oil City	Charley Run	458.05	92.45
Bradford	Tidewater	181,796.65	159,669.16
Total deliveries		1,757,066.82	1,787,615.69
Total Runs		2,226,864.94	2,339,327.42
Am't of Runs in excess Shipment,		469,798.12	551,711.73

District.	Pipe.	*Stocks Dec. 31.* Barrels.	*Stocks Feb. 28.* Barrels.
Oil City	Charley Run	2,844.39	3,264.67
Bradford	Tidewater	2,182,753.53	2,332,663.87
All Districts	United	23,481,270.73	23,939,993.81
Shaffer	Shaffer Run	25,203.48	26,008.83
Warren	Union Oil Co.	82,499.11	95,132.28
Titusville	Octave Oil Co.	8,013.70	8,986.61
Franklin	Franklin Pipe	5,486.85	8,224,29
Total January		25,788.071.79	
Total February			26,414,274.56
Total December			25,788,071.79
Increase February			626,202.77
Average increase per day February,			22,364.00
Average increase per day December,			12,174.73

STATEMENT made by the United States Pipe Lines July 10th, 1880, and enlarged to March, 1882. It gives gross stocks, sediment and surplus, net stocks, outstanding balances, receipts (or runs) from all sources, and total deliveries:

	Gross Stocks.	Sediment and Surplus.	Net Stocks.	Outstanding Acceptances.	Credit Balances.	Receipts from all Sources.	Total Deliveries.
1877—April	1,895,153 71	77,386.70	1,817,767.01	449,640.14	1,368,126.87	200,570.81	125,797.90
May	1,762,602.64	75,363 87	1,687,237.77	663,663.71	1,003,574.06	493,200.58	619,612.26
June	1,596,367.68	81,255.42	1,488,112.26	661,786.57	826,325.69	538,906.95	737,609.77
July	1,482,433.51	81,741.50	1,400,692.01	667,166.36	733,625.65	615,145.46	699,476.18
August	1,489,052.53	81,144.63	1,407,907 90	643,281.46	764,626.44	673,403.04	666,144.28
September	1,339,032.27	67,163.68	1,271,868.59	552,676.26	719,192.33	625,225.37	769,745.57
October	1,434,728.78	46,771.99	1,387,956.79	673,850.05	714,106.74	687,094.59	570,092.71
November	1,691,399.52	39,418.00	1,651,981.52	657,591.36	994,390.16	913,644.19	649,242.70
December	2,830,413.36	68,729.63	2,761,685.73	754,338.25	2,007,347.48	1,656,150.37	506,332.99
1878—January	3,124,641.15	72,453.43	3,052,187.72	864,711.41	2,187,476.31	872,681.18	715,149.78
February	3,439,526 98	82,452.66	3,357,074.32	1,404,292.13	1,952,782.19	1,030,688.44	720,478.14
March	3,940,000.65	92,963.06	3,847,037.59	1,487,430.50	2,359,598 09	1,196,251.26	701,681.27
April	4,335,274.84	133,935.76	4,201,340.08	1,615,791.19	2,585,548.89	1,137,359.40	778,050.53
May	4,609,681.45	150,117.76	4,459,563.69	2,065,333.31	2,394,230.38	1,104,352.40	843,081.33
June	4,719,699 25	181,800.03	4,537,899.22	1,950,420.81	2,587,478.41	1,092,604.02	1,004,474.55
July	4,885,851.72	229,080.78	4,656,770.94	2,078,466.56	2,578,301.38	1,258,648.45	1,108,074.33
August	4,571,658.59	217,085 19	4,354,573 40	2,064,590.75	2,289,982.64	1,195,268.67	1,496,009.04
September	4,410,061.84	225,088.86	4,184,972.88	2,705,853.95	2,479,119.03	1,182,118.57	1,318,265.33
October	4,072,267.43	234,050 89	3,838,576.54	1,517,484.27	2,321,092 27	1,271,174.73	1,564,984.43
November	4,083,972.42	216,655.30	3,867,317.12	1,784,443.35	2,082,873.77	1,159,623.71	1,129,047.42
December	4,098,200.92	201,470.30	3,896,730.62	1,741,311.07	2,155,419.55	972,338.83	924,035.93
1879—January	4,759,031.41	182,707.80	4,576,323.61	2,153,763.83	2,422,559.78	1,231,237.19	546,271.74
February	5,157,646.15	171,689.80	4,985,956.35	2,346,238 22	2,639,718.13	1,055,377.95	643,828.71
March	5,503,768.71	190 797.91	5,312,970.80	2,484,861.83	2,828,088.87	1,363,512.17	1,029,029 70
April	5,885,675.24	211,957.06	5,673,718.18	2,644,301.36	3,029,416.82	1,379,349.76	1,015,482 04
May	6,180,843.53	315,992.98	5,864,850.55	2,522,846.36	3,342,364.19	1,488,514.31	2,228,043.27
June	6,426,802 45	334,457.29	6,992,345.16	2,959,921.12	3,132,424 04	1,437,250.90	1,204,557.54
July	6,419,699.08	323,295.32	6,096,403.76	2,323,575.29	2,772,828.47	1,472,651.01	1,465,518.05
August	6,380,606 63	300,345 15	6,078,261.48	3,581,224.03	2,497,037.45	1,714,620.11	1,728,940.81
September	6,589,859.83	325,363.85	6,264,995.98	3,783,480.38	2,481,015.60	1,691,863.41	1,455,811.45
October	6,701,209.87	299,393.67	6,401,816.20	3,788,155 65	2,613,660.55	1,646,725.06	1,502,991.20
November	6,951,133.67	303,641.17	6,647,492.50	3,927,300.18	2,675,192.32	1,600,961.29	1,328,621.19
December	7,362,409.76	294,571.37	7,067,838.39	4,235 459.40	2,832,378.99	1,771,781.24	1,331,822.12
1880—January	7,735,257.38	295,517.60	7,439,739.78	4,436,788.55	3,002,951.25	1,832,963.04	1,145,194.98
February	8,187,012 49	322,568.93	7,864,443.56	4,602,286.49	3,262,157.07	1,607,663.89	1,178,111 92
March	8,621,097.49	351,130.35	8,969,967.14	4,811,894.33	3,458,072.81	1,815,133.31	1,396,037.88
April	9,662,354.59	388,558.16	9,273,766.43	5,846,536.60	3,427,259.83	1,739,297.37	723,794.73
May	10,306,078.79	454,193.73	9,851,885 06	6,361,320.05	3,490,565.01	1,552,240.91	975,061.26
June	11,266,771.77	477,431.60	10,789,340.08	7,397,131.89	3,392,208.19	1,781,937.29	848,339.08
July	12,039,010.00	475,446.56	11,563,563.44	8,125,241 25	3,438,332.19	1,890,161.44	1,095,528.25
August	12,749,623.28	462,987.28	12,286,636.00	8,635,394.80	4,651,241.20	1,904,452.70	1,177,448.42
September	13,618,276.03	382,398.71	13,236,327.32	9,287,193.94	3,949,133 38	2,075,105.26	1,115,184.71
October	14,020,877.32	391,331.55	13,629,545.84	9,448,615.77	4,180,930.07	1,999,487.98	1,598,285.06
November	14 656,891.55	341,262.67	14,315,628.88	10,038,824.08	4,231,804.80	1,859,991.50	1,064,146.39
December	15,369,758.67	361,184.83	15,008,573.48	10,913,283.49	4,095,290.35	1,987,283.54	1,207,928.35
1881—January	16,291,307.87	360,688.98	15,930,618 89	11,672,583.61	4,258,035.28	1,876,526.50	931,818.71
February	17,355,485.31	391,616.47	16,936,868.84	12,029,594.35	4,934,274.49	1,823,713.46	781,745.93
March	18,488,476.94	432,304.19	18,056,172.75	13,099,262.44	4,956,910.31	2,222,812.39	1,116,695.11
April	19,560,752.23	517,422.38	19,043,329.85	13,846,285.20	5,197,044.65	2,182,636.96	1,183,779.02
May	20,591,177.33	640,662.03	19,950,455.30	14,608,124.70	5,342,330.60	2,278,582.78	1,356,688.23
June	21,397,698.53	756,412.85	20,641,285.68	14,738,828.77	5,902,456.91	2,318,445.18	1,545,448.13
July	21,982,161.42	774,402.94	21,207,758 48	15,150,267.23	6,057,131.25	2,396,472.50	1,756,044.15
August	22,474,105.51	800,343.43	21,673,762.18	15,240,553.15	6,433,209.03	2,527,888.69	2,013,844.67
September	22,727,740.61	820,434.43	21,907,306.18	15,626,283.11	6,281,023.07	2,233,085.37	1,900,251.83
October	23,212,951.99	801,243.43	22,431,708.56	16,408,030.46	6,023,678.10	2,452,428.66	1,803,052.62
November	23,303,782.34	746,980.08	22,556,744.26	16,407,354.48	6,149,389.78	1,995,895.38	1,742,462.86
December	23,862,966.20	‖775,000.00	23,087,966.20	. . . . .	. . . . .	2,255,252.50	1,696,068.64
1882—January	24,243,382.26	762,111.53	23,481,270.73	17,788,245.97	5,693,024.76	1,984,325.23	1,547,945.23
February	24,704,933.81	‖765,000.00	23,939,933.81	. . . . .	. . . . .	2,062,742.98	1,601,191.43

‖ Estimated.

THE New-York, Pennsylvania & Ohio Railroad Company has closed a contract with Messrs. Post, Martin & Co., of New-York, for the lease of 2,700 cars for freight traffic. The cars of the latest improved patterns, being made at the Terre Haute Car Works, St. Louis Car and Foundry Company, Ohio Falls Car Works, and Tiffin Car Works. The standard value of the box cars in contract is estimated at $800 each. The stock and other cars are estimated proportionately. According to the agreement, the New-York, Pennsylvania & Ohio Company are to pay for the cars $1,822,422.84 in eighty-four consecutive monthly payments of $21,695.31. This is one of the largest rental contracts ever made by any corporation.—*Baldwin's Railway Guide.*

PRODUCTION TABLE.

SHOWING THE TOTAL YIELD OF THE PENNSYLVANIA OIL FIELD FROM SEPTEMBER, 1859, TO MARCH, 1882.

Years.	Jan.	Feb.	Mar.	April.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.	Totals.
1859	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	10	15	18	28	2,173
1860	30	50	89	215	500	1,000	2,000	2,500	3,000	3,500	2,000	3,000	547,439
1861	3,201	4,041	4,800	5,400	6,000	6,100	7,100	8,500	7,000	5,150	5,514	6,716	2,119,045
1862	6,000	5,300	7,400	8,000	9,400	9,000	8,500	11,000	13,000	10,565	8,053	7,238	3,153,183
1863	6,200	6,400	7,000	5,500	6,000	7,603	7,022	8,100	9,200	7,120	9,500	10,260	2,667,542
1864	8,100	6,300	4,500	5,000	7,000	5,100	5,600	5,700	7,180	5,545	10,100	10,320	2,215,150
1865	5,900	5,800	5,000	7,500	8,000	8,000	7,400	6,350	6,400	6,800	7,600	9,350	2,560,200
1866	9,200	9,100	5,000	7,100	8,100	9,500	9,350	9,440	12,000	10,400	11,000	11,165	3,385,105
1867	10,900	8,100	9,000	10,100	10,500	9,000	10,100	10,000	10,100	7,660	9,155	8,313	3,458,113
1868	8,200	9,400	8,100	9,300	11,000	12,400	13,000	11,800	10,250	8,225	7,580	7,150	3,540,670
1869	8,100	8,500	10,000	11,000	13,000	13,000	13,560	13,000	13,500	12,500	11,200	10,625	4,186,475
1870	11,348	11,802	11,509	12,400	15,990	13,400	13,800	15,950	18,203	18,000	17,061	15,990	5,308,046
1871	13,500	13,300	13,082	12,950	13,054	13,882	14,900	15,866	15,555	15,889	15,599	15,841	5,278,072
1872	17,943	17,894	15,680	16,221	17,402	12,140	16,933	17,440	16,598	18,450	25,942	20,630	6,505,774
1873	20,550	21,460	21,830	22,260	24,632	26,361	23,406	30,900	32,500	31,343	33,584	34,680	9,849,508
1874	32,800	30,940	29,760	28,104	29,442	31,222	33,987	32,000	29,461	29,944	29,231	28,101	11,102,114
1875	27,900	26,509	26,012	23,009	23,000	23,805	24,991	23,940	23,800	23,900	23,821	23,594	8,948,749
1876	23,102	25,440	23,560	23,800	24,628	24,400	24,890	25,300	25,900	26,400	26,500	25,900	9,142,940
1877	26,930	27,560	28,860	32,060	36,000	37,440	39,210	42,100	41,321	41,200	39,900	40,120	13,230,330
1878	39,200	39,900	39,200	40,100	41,111	40,820	41,200	42,900	43,999	44,480	45,200	43,900	15,272,491
1879	44,000	43,830	47,960	50,810	52,911	55,600	56,911	59,940	61,498	60,980	58,750	58,231	19,835,903
1880	59,982	63,890	66,215	68,063	72,080	73,104	73,794	74,980	71,941	77,491	76,112	74,080	26,086,692
1881	73,030	69,060	73,900	75,245	79,000	82,460	81,900	79,100	78,231	77,971	77,892	76,642	28,136,353
1882	75,028	74,910	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .
Total twenty-three years to December 31st, 1881,													186,532,067

WELLS COMPLETED.

TOTAL NUMBER WELLS COMPLETED EACH MONTH IN THE YEARS NAMED.

A. D.	Jan.	Feb.	March.	April.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.	Total.
1870	131	131	114	135	164	182	161	156	135	144	112	79	1,644
1871	98	68	70	81	95	150	139	116	125	186	161	181	1,472
1872	48	118	98	122	130	98	131	117	96	101	41	101	1,201
1873	100	105	105	110	106	180	112	116	116	111	108	95	1,361
1874	108	111	108	110	112	113	124	102	108	117	112	116	1,341
1875	184	186	194	180	169	194	208	206	208	215	213	228	2,385
1876	235	236	248	207	200	258	243	274	223	270	278	271	2,945
1877	275	249	296	264	336	598	314	254	332	460	398	391	2,962
1878	279	238	202	411	468	278	210	180	176	232	241	160	3,075
1879	144	136	221	263	395	336	335	280	269	229	225	268	3,101
1880	311	238	358	494	435	315	339	359	359	360	334	309	4,211
1881	232	218	201	310	412	371	348	335	314	302	347	405	3,795
1882	357	359	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .

London World:—"Gas is one of the great enemies of the human race; as it tarnishes silver and kills flowers, so is it, if not fatal, at least malignantly hostile, to the fairest countenance, whose first youth has gone. The expulsion of gas from drawing rooms, and from dwelling rooms generally, is one of the events on which the present age is cordially to be congratulated. In many London houses it was, indeed, never tolerated, just as it is rigidly excluded from some of the best managed clubs. But its convenience was so great, and it saved so much trouble, that it was difficult to dispense with it. At last it has been discovered that it has a destructive quality. Ladies, young and old, have found from experience that it is unbecoming; that if a drawing room and its mistress are to look well there is no such picturesque security for their doing so as the subdued and faintly-tinted light thrown by the latest novelties in drawing room petroleum lamps."

BUFFALO & ROCK CITY PIPE LINE.—At the annual meeting in Buffalo the following officers were elected; Franklin H. Kalbfleisch, Alfred P. Wright, Albert M. Kalbfleisch, Daniel N. Lockwood, R. H. Lee, Theodore V. Fowler, John H. Flagg. The board elected the following officers: President, Franklin H. Kalbfleisch; Vice-President, A. P. Wright; Treasurer, Albert H. Kalbfleisch; Secretary, Theodore V. Fowler.

PETROLEUM EXPORTS FROM 1864 TO 1881, INCLUSIVE.

THE quantity of Petroleum and the quantity and value of Petroleum Products exported from the United States, during each of the fiscal years from 1864 to 1881, inclusive, as reported by the Bureau of Statistics, are as follows:

Year ended June 30.	EXPORTS.											
	Mineral, crude (including all natural oils without regard to gravity.)		Mineral, Refined or Manufactured.						Residuum (tar, pitch, and all other from which the light bodies have been distilled).		TOTAL.	
			Naphtha, benzine, gasoline, etc.		Illuminating.		Lubricating (heavy parafine, etc.).					
	Gallons.	Dollars.	Gallons.	Dollars.	Gallons.	Dollars.	Gallons.	Dollars.	Gallons.*a*	Dols.	Gallons.	Dollars.
1864 . .	9980654	3864187	438197	154191	12791518	6764411	. . .	. . .	. . . .	. . .	23210369	10782689
1865 . .	12293896	6868513	480947	173943	12722005	9520957	. . .	. . .	. . . .	. . .	25496848	16563413
1866 . .	16057943	6015921	673417	188825	34255921	18626141	. . .	. . .	. . . .	. . .	50987341	24830887
1867 . .	7344248	1865001	224576	34175	62686687	22509466	. . .	. . .	. . . .	. . .	70255511	24407642
1868 . .	10029659	1564933	1517268	167873	67909961	19977870	. . .	. . .	. . . .	. . .	79456888	21810676
1869 . .	13425566	2994404	2673094	445770	84403492	27636137	*b*134532	51122	. . . .	. . .	100636684	31127433
1870 . .	10403314	2237292	5422604	564864	97902505	29864193	*b*6871	2611	. . . .	. . .	113735294	32668960
1871 . .	9859038	1971847	7209592	746797	132608955	34138736	*b*59632	22660	155474	14770	149892691	36894810
1872 . .	13599768	2307111	8092635	932160	122539575	30566108	541419	211287	438186	41724	145211583	34058390
1873 . .	18439407	3010050	9743593	1487439	158102414	37195735	748699	277966	781074	79566	187815187	42056756
1874 . .	17776419	2099696	9737457	1038622	217220504	37560995	1244305	404244	1827798	142299	247806483	51254815
1875 . .	14718114	1406018	11758940	1141440	191551933	27030361	1173473	313656	2752848	187103	221955308	30078568
1876 . .	20520397	2220268	14780236	1442811	204814673	28755638	963442	303863	2581404	193206	243660152	32519786
1877 . .	26819202	3756729	15140183	1816682	262441844	55401132	1601065	497540	3196620	317355	309198914	61789438
1878 . .	27936727	2694018	16416621	1411812	289214541	41513676	2304624	639381	3968790	316087	339841303	46574974
1879 . .	25874488	1927207	18411044	1192229	367325823	31783575	5162835	1039124	4967000	276490	421741190	36218625
1880 . .	28297997	2180413	15054361	1258780	331586442	35999862	2487681	655468	3307038	210726	380733519	40305249
1881 . .	44690998	. . . .	20342664	. . . .	487322613	. . . .	. . .	. . .	. . . .	. . .	552356275	34343260

As a given number of gallons of refined petroleum represents the product of a larger number of gallons of crude petroleum, it is necessary to reduce the exports of petroleum to their equivalent in crude oil, in order to arrive at a knowledge of the percentage of the total product of mineral oil exported. It has been ascertained as a result of a careful computation, that the quantity of petroleum and its distilled products exported during the year ended June 30, 1878, was equivalent to 407,482,175 gallons of crude oil; or, in other words, that the exports of petroleum constituted about 66 per cent. of the production. A larger percentage of the mineral oil product of the country is exported than of any other product except cotton.

a Barrels reduced to gallons at the rate of 42 gallons to the barrel. *b* Estimated.

CRUDE OIL MARKET.

MONTHLY AND YEARLY AVERAGE PRICE OF PIPE LINE CERTIFICATES OR CRUDE OIL AT THE WELLS.

A. D.	Jan. Ave'age	Feb. Ave'age	March Ave'age	April Ave'age	May Ave'age	June Ave'age	July Ave'age	Aug. Ave'age	Sept. Ave'age	Oct. Ave'age	Nov. Ave'age	D'emb'r Ave'age	Yearly Avrges.
1859.	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	20.00	20.00	20.00	20.00	20.00
1860.	19.25	18.00	12.62½	11.00	10.00	9.50	8.62½	7.50	6.62½	5.50	3.75	2.75	9.60
1861.	1.00	1.00	1.00	.62½	.50	.50	.50	.25	.20	.10	.10	.10	.49
1862.	.10	.15	.22½	.50	.85	1.00	1.25	1.25	1.25	1.75	2.00	2.25	1.05
1863.	2.25	2.50	2.62½	2.87½	2.87½	3.00	3.25	3.37½	3.50	3.75	3.85	3.95	3.15
1864.	4.00	4.37½	5.50	6.56	6.87½	9.50	12.12½	10.12½	8.87½	7.75	10.00	11.00	9.87½
1865.	8.25	7.50	6.00	6.00	7.37½	5.62½	5.12½	4.62½	6.75	8.12½	7.25	6.50	6.59
1866.	4.50	4.40	3.75	3.95	4.50	3.87½	3.00	3.75	4.50	3.39	3.10	2.12½	3.74
1867.	1.87½	1.85	1.75	2.07½	2.35	1.90	2.62½	3.15	3.40	3.55	2.50	1.87½	2.41
1868.	1.95	2.00	2.55	2.82	3.75	4.50	5.12½	4.57½	4.00	4.12½	3.75	4.35	3.62½
1869.	5.75	6.95	6.00	5.70½	5.35	4.95	5.37½	5.57½	5.50	5.50	5.80	5.12½	5.63¾
1870.	4.52½	4.52½	4.45	4.22½	4.40	4.17½	3.77½	3.15	3.25	3.27½	3.22½	3.40	3.89
1871.	3.82½	4.38	4.25	4.01	4.60	3.85½	4.79	4.66	4.65	4.82½	4.25	4.00	4 34
1872.	4.92½	3.80	3.72½	3.52½	3.80	3.85	3.80	3.58½	3.25	3.15	3.83½	3.32½	3.64
1873.	2.60	2.20	2.12½	2.30	2.47½	2.22½	2.00	1.42½	1.15	1.20	1.25	1.00	1.83
1874.	1.20	1.40	1.60	1.90	1.62½	1.32½	1.02½	.95	.95	.85	.55	.61½	1.17
1875.	1.03	1.52½	1.75	1.36½	1.40	1.26½	1.09	1.13	1.33	1.32½	1.44	1.55	1.35
1876.	1.80	2.00	2.01	2.02¼	1.90½	2.01¾	2.24½	2.71	3.81	3.37½	3.11	3.73	2.56¼
1877.	3.53¼	2.70	2.67½	2.58	2.24	1.94⅝	2.07½	2.51	2.38	2.56¾	1.91	1.80	2.42
1878.	1.43	1.65¼	1.59	1.37½	1.35¼	1.14	.98¾	1.01⅜	.86½	.82½	.89⅜	1.16	1.19
1879.	1.03	.98	.86¼	.78½	.76	.68⅜	.69⅞	.67⅛	.69½	.88½	1.05⅜	1.18⅛	.85⅞
1880.	1.10¼	1.03⅛	.88¼	.78	.80	1.00	1.06¼	.91	.96	.96⅞	.91⅞	.91⅝	.94½
1881.	.95½	.90⅜	.83⅜	.86¾	.81⅞	.81¼	.76⅞	.78⅝	93.3–16	.94¾	.83	.84	.85¾
1882.	.83¼	.85¾	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .

SHIPMENTS.

Shipment of Crude and Refined reduced to Crude Equivalent out of the Producing Regions in the years named:

Year.	January.	February.	March.	April.	May.	June.	July.	August.	September.	October.	November.	December.	Totals.
1859	. . . .	. . . .	. . . .	. . . .	. . . .	. . . .	. . . .	. . . .	. . . .	. . . .	500	1,200	1,700
1860	900	1,200	2,500	4,640	11.000	21,000	58,500	64,300	79,000	78,400	63,400	38,400	423,240
1861	54,800	49,620	68,410	95,300	184,000	189,000	200,400	210,000	263,000	184,000	76,321	75,282	1,650,133
1862	98,212	93,101	103,762	201,430	256,320	385,211	375,440	376,311	401,210	406,500	213,611	190,463	3,141,521
1863	171,132	104,928	148,388	288,994	456,211	428,282	213,413	281,400	398,211	264,441	281.340	206,211	3,242,951
1864	148,324	101,431	96,486	132,486	125,218	221,386	110,490	101,218	228,430	220,386	201,441	154,765	1,842,001
1865	121,386	94,803	103,201	122,222	140,301	338,403	184,231	115,821	231,402	228,321	215,262	204,779	2,100,132
1866	132,200	121,320	180,206	260,231	280,320	390,260	200,410	290,210	390,431	318,616	210,016	236,701	3,010,921
1867	123,460	115,321	165,230	250,830	300,210	360,311	210,410	260,310	384,206	300,102	280,013	132,807	2,883,210
1868	150,220	144,201	200,410	280,430	310,408	400,046	390,402	320,210	480,306	260,240	280,260	265,377	3,482,510
1869	200,026	160,320	240,210	260,406	340,318	400,601	310,260	250,214	450,200	480.860	280,210	249,896	3,623,521
1870	360,933	312,910	354,400	390,003	407,908	418,516	410,707	516,679	542,217	557,624	519,780	444,254	5,235,931
1871	437,691	347,718	383,890	389.147	587,375	501,754	541,137	528,134	551,075	505,071	480.977	410,822	5,664,791
1872	476,966	407,606	276,220	428,512	510,417	529,228	591,238	621,954	541,607	607,468	477,940	430,786	5,899,942
1873	573,124	527,440	668,374	708,191	768,176	696,414	814,449	864,768	952,955	1,010,852	959,589	955,443	9,499,775
1874	843,663	501,220	518,246	803,409	899,027	815,413	940,281	793,865	1,014,570	543,341	546,117	602,348	8,821,500
1875	435,095	327,776	693,918	729,581	681,679	745,986	904,537	882,089	1,109,392	871,917	671,066	871,902	8,924,938
1876	677,289	519,193	623,762	603,037	646,150	921,862	1,228,530	1,203,402	1,154,549	524,190	871,496	1,190,983	10,164,443
1877	743,461	484,904	913,919	903,526	1,234,324	1,391,124	1,096,951	1,425,943	1,563,797	1,268,971	1,205,634	600,019	12,832,578
1878	775,791	774,234	741,512	846,636	960,894	1,135,119	1,330,454	1,655,651	1,434,225	1,747,390	1,281,410	992,688	13,476,000
1879	663,998	702,729	973,879	1,136,188	1,331,469	1,369,314	1,625,035	1,808,238	1,627,120	1,662,269	1,453,645	1,542,585	15,896,469
1880	1,650,409	1,395,151	1,613,371	842,268	1,095,259	975,083	1,231,611	1,304,129	1,252,635	1,665,933	1,226,030	1,335,613	15,587,447
1881	1,061,617	915,028	1,276,740	1,348,398	1,563,436	1,729,697	1,925,532	2,214,877	2,031,950	2,080,467	2,069,641	2,014,655	20,232,038
1882	1,817,973	1,829,779	. . . .	. . . .	. . . .	. . . .	. . . .	. . . .	. . . .	. . . .	. . . .	. . . .	. . . .
. . . .	. . . .	. . . .	. . . .	. . . .	. . . .	. . . .	. . . .	. . . .	. . . .	. . . .	. . . .	. . . .	. . . .

CONGLOMERATE.

MR. M. Hulings, of Oil City, claims to be in possession of the finest tract of oil territory he has ever owned. It is located on Duck Creek, Southern Ohio.

BROWN Bros., of Clarendon, Pa., have adopted an admirable system of leasing their land in sites containing four acres each, on the center of which a stake is driven, where the well must be located. This gives each and every well an equal chance, and prevents the destructive habit of drilling to protect lines.

A DESERVEDLY popular hardware house is that of J. W. Alexander & Co., of Olean, N. Y. Since the development of the Richburg field, it has been all the firm could do to keep their orders filled.

To facilitate business, and enable them to handle their large stock with more satisfaction to themselves, a new and extensive warehouse, located on the B., N. Y. & P. R. R., has just been completed.

Mr. Alexander's long experience in the hardware trade, having been a member of the firm of Alexander & Arter, at Parker, Pa., and also at the present time a director in the Gibbs & Sterritt Mfg. Co., of Titusville, Pa., enables him to bring a business experience to the business, which is almost invaluable. Mr. Thyng, the other member of the firm, is a young man of many excellent parts.

They are doing the oil well supply business of Olean. Producers will find them pleasant gentlemen to do business with.

RICHBURG is rated at 13,200, with 750 wells.

THE California oil fields produce 300 barrels a day.

THE Allegany field runs for February were a little over 9,500 barrels a day during the month.

The Thomas well, in Potter county, was put down as worthless some time ago, and the turn was properly called.

THE Sugar Run section of the McKean field promises, at some future time, to develop into considerable of an "annex."

THE lubricating oil field of Litchfield, Ill., is attracting considerable attention. A first-class lubricator is obtained, and large tracts of territory have been leased for drilling purposes.

ABANDONED WELLS.—Mr. A. B. Smith and other producers, after a careful search for three months, report flowing wells, 6,244; pumping, 5,712; partially abandoned, 48; total, 12,004. Totally abandoned, 586, Bradford field.

A GENTLEMAN representing an Austrian oil company is now (March 10th), visiting this region, with a view of obtaining machinery and a general outfit of well supplies, to be used in developing the supposed oil field of his native country.

Mr. O. P. Taylor looks well in a picture. He will be studied by more oil men now than he ever dreamed of. The only difficulty about his case is that other men will probably also desire to become discoverers, and, failing, will pass out forgotten and unread.

MATTERS in the great torpedo war are moving along slowly, both sides being very busy casting up legal breastworks preparatory to the great battle that is promised some time in the future. Meanwhile the producers of Allegany continue to "shoot" independent of the enemy.

MR. Z. Martin, proprietor of the Newton House, Bolivar, formerly pumped the second well ever drilled in the oil regions, and known as the Barnsdall & Co. Well. Mr. Martin acted afterwards as field superintendent, and was the first one that ever acted in that capacity.

L. EMERY, Jr., & Co., are building a large warehouse in Bolivar. This will make two in the Allegany field which this enterprising firm have recently built and stocked — one at Richburg and the one at Bolivar, now almost completed. Pluck, push and liberality, have always characterized the business methods of this firm.

THE Clark Combination Coupling and Adjustable Flange Union is said to be one of the greatest inventions of the day. Producers and others who have used it pronounce it superior to anything in shape of a flange union ever introduced in the Oil Regions. Orders have already come in such demand from all parts of the world that the manufacturers, Messrs. Barclay, Giebner & Co., of Bradford, have been compelled to scale their orders thus far. They have now made arrangements, however, to largely increase their capacity for manufacturing.

RICE, Robinson & Witherop, of Titusville, are prospering, selling all the oil they can manufacture. They are manufacturing a lubricating oil that is meeting with much favor. The effects of the disastrous fire of last December has been entirely obliterated, and now their refinery is running again with all its former activity.

THE March number of Baldwin's Railway Guide made its appearance last Friday, the 3d. This is an invaluable companion of American tourists and travelers generally. It is standard authority in railway matters, and is perfectly reliable in its detail statements of the movements of trains. It is printed in attractive style and edited with great care and ability.

THE ALLEGANY FIELD.

TABLE SHOWING THE PROGRESS OF DEVELOPMENTS AND PRODUCTION OF THE ALLEGANY (N. Y.) FIELD.

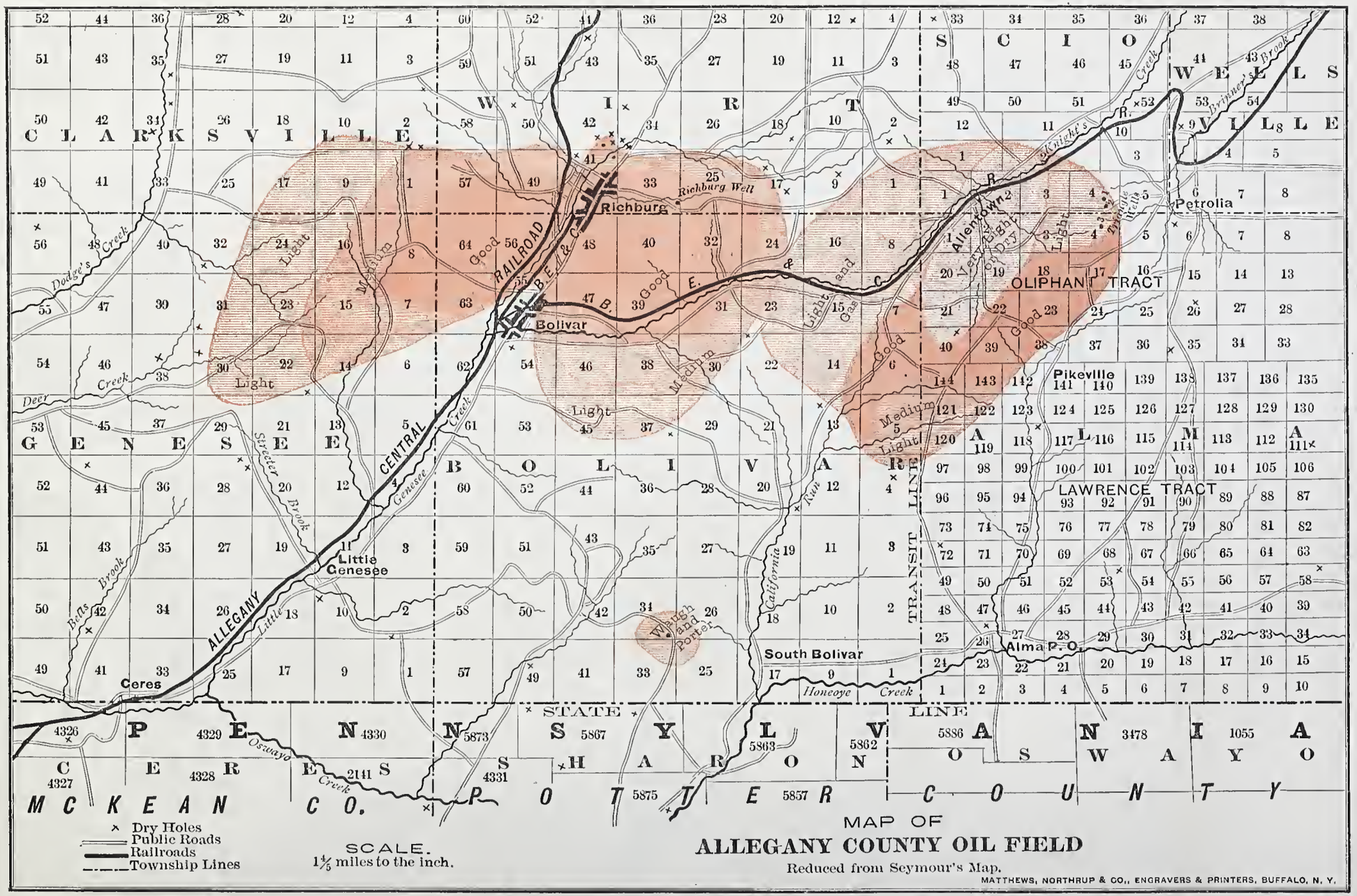
MONTH.	No. of wells completed.	Dry.	Production.	Average per well.	Daily Production of Field.	Drilling.	Rigs.	Stocks in wooden tanks.	Stocks in Iron tanks.
Total, 1880	8	42	76	9½	76	4	6	. . .	. . .
January .	4	2	18	9	94	4	5	. . .	. . .
February	4	1	24	6	112	4	8	. . .	. . .
March .	5	2	60	12	162	4	7	. . .	. . .
April . .	3	1	20	10	170	5	6	. . .	. . .
May . .	4	1	48	12	212	20	21	. . .	. . .
June . .	14	8	130	9¼	327	24	35	. . .	. . .
July . .	22	5	275	12½	588	47	57	. . .	. . .
August .	53	17	586	11	1080	62	68	. . .	. .
September	63	11	910	14½	1740	105	118	. . .	. . .
October .	96	5	1432	15	2896	164	198	38000	108891
November	154	10	2732	17½	5180	155	200	84666	142216
December	196	2	5115	26 1/10	8937	187	204	180200	169250
Jan. 31st .	162	2	3914	24 ⅛	11123	191	209	270860	243147
Feb. 28th	189	4	4154	21.97	13200	212	201	358360	258247

Runs for February	266,450
Increase Wood Tanks	87,500
Increase Iron Tanks	15,100
Total	369.050
Average daily Feb.	13,181

EXPORTS.

The exports from New-York and Philadelphia January 1st to February 4th:

	1882. GALLONS.	1881. GALLONS.
New-York,	51,452,929	39,358,150
Philadelphia,	9,990,909	4,918,262
TOTALS	61,443,838	44,276,412


CLARKSVILLE
WIRT
SCIO
WELLSVILLE
Richburg
Richburg Well
Petrolia
Bolivar
OLIPHANT TRACT
Pikeville
LAWRENCE TRACT
Alma P. O.
Little Genesee
South Bolivar
Ceres
GENESEE
BOLIVAR
ALLEGANY
CENTRAL R.R.
B. E. & C. RAILROAD
TRANSIT LINE
STATE LINE
Dry Holes
Public Roads
Railroads
Township Lines
SCALE.
1⅕ miles to the inch.
MAP OF
ALLEGANY COUNTY OIL FIELD
Reduced from Seymour's Map.
MATTHEWS, NORTHRUP & CO., ENGRAVERS & PRINTERS, BUFFALO, N. Y.

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AGENTS FOR GIBBS & STERRETT MANUFACTURING CO.'S

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RUBBER GOODS, STEAM PUMPS, BRASS GOODS, FITTINGS, RIG IRONS,

HANCOCK INSPIRATORS,

And Everything which the Noble Producer or the Lively Contractor may desire.

LAY THAT DOWN AND LISTEN! We can furnish you with Jars, which average **4,500** feet. We can sell you Fittings, Rig Irons, etc., as cheap as you can buy them **next door to your well. OUR BOILERS** are the very best made, and we can prove it. **FORTY-SEVEN** of our Engines used by one man have **cost only 85 cents for repairs. YOU CAN'T BEAT THAT!** And we can furnish you an **affidavit for what we blow.** Everything we ship to you just as cheap as you can buy it anywhere. And do not forget that we have **telephone connections with all points in the Oil Country,** which makes communication with us **FREE TO YOU.**

Turn the Chromo and Let the Conversation Resume.

Oil Brokers.

N. F. HILTON. JAS. A. WAUGH.

HILTON & WAUGH,

PETROLEUM BROKERS.

Oil bought, sold and carried on margins. Offices at

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BUFFALO & SOUTH-WESTERN DIVISION.

LOCAL TIME TABLE.

	(10)	Daily (4)	Daily (2)	STATIONS.	Mls	Daily (1)	Daily (3)	(11)
	P. M.	P. M.	A. M.			A. M.	P. M.	A. M.
		6.50	10.20	Ar...BUFFALO..Lv.	0	8.19	4.45	
	4.17		9.58	Lv.Limest'ne R'ge "	4		5.06	8.43
	3.57		9.47	" ...Big Tree... "	8		5.16	8.48
	3.50		9.44	" Abbott's Road "	10		5.20	8.55
	3.33	6.14	9.35	" ..Hamburgh.. "	12	8.48	5.28	9.35
	3.30		9.33	" .Water Valley. "	13		5.30	9.40
	3.15		9.26	" .Eden Valley. "	16		5.36	9.53
	3.03	6.02	9.20	" .Eden Center. "	18	9 00	5.43	10.05
	2.40	5.53	9.09	" .North Collins. "	22	9.09	5.53	10.30
	2.18		8.57	" ....Lawtons... "	26		6.04	10.53
	2.00	5.37	8.49	" .... Collins. .. "	29	9.24	6.12	11.10
	1.45	5.30	8.40	" ...Gowanda .. "	32	9.30	6.20	12.00
	12.45	5.15	8.25	Lv.....Dayton ... Ar.	37	9.45	6.35	12.30
	12.30	5.10	8.23	Ar.....Dayton ...Lv.	37	9.55	7.03	1.00
	12.15	5.02	8.19	Lv....Markhams.. "	39	10.00	7.08	1.12
	11.45	4.53	8.11	" ..Pine Valley.. "	42	10.08	7.17	1.32
	11.05	4.40	8.00	" .Cherry Creek.. "	47	10.20	7.29	2.02
	10.30	4.29	7.51	" ..Conewango.. "	51	10.30	7.39	2.20
	9.38	4.08	7.34	" ....Kennedy... "	59	10 48	7.58	3.16
	9.00	3.53	7.22	" D.A.V.&P.Cr'g "	65	11.02	8.13	3.53
	8.30	3.45	7.15	Lv.JAMESTO'N..Ar.	68	11.10	8.20	4.15
	A. M.	P. M.	A. M.			A. M.	P. M.	P. M.

Trains No. 1 and 4 stop at all stations on Sunday.

THROUGH CONNECTIONS FOR THE WEST.

(4)	(2)	STATIONS.	(1)	(3)
	2.50 P. M.	Ar.....BOSTON Lv		3.00 P. M.
11.25 A. M.	7.25 A. M.	" .....New-York .... "	5.45 P. M.	6.45 "
3.47 "	11.00 P.M.	" .... Binghamton..... "	1.21 A. M.	3.35 A. M.
2.03 "	8.55 "	" .....Elmira ..... "	3.07 "	5.35 "
9.25 P. M.	1.03 "	" .... Niagara Falls .... "	4.35 "	2.15 P. M.
6.50 P. M.	10.20 A. M.	Ar.. ..BUFFALO Lv	8.10 A. M.	4.45 P. M.
3.45 P. M.	7.15 A. M.	Lv... JAMESTOWN....Ar	11.10 A. M.	8.20 P. M.
1.03 "	5.20 "	" ..... Corry ..... "	12.55 P. M.	8.55 "
11.40 A. M.	3.55 "	" ..... Meadville ..... "	2.20 "	10.40 "
10.25 "	2.40 "	" .....Greenville..... "	3.36 "	3.44 A. M.
9.10 "	1.08 "	" ..... Warren ..... "	4.44 "	4.54 "
7.10 "	10.45 P. M.	" ..... Cleveland..... "	7.00 "	6 50 "
8.17 "	12.08 A. M.	" .....Ravenna..... "	5.42 "	5.47 "
8.05 "	11.55 P. M.	" .....Kent.... .... "	5 55 "	6.00 "
7.24 "	11.20 "	" .....Akron... .... "	6.38 "	6.30 "
4.44 "	8.25 "	" ..... Mansfield ..... "	9.10 "	9.30 "
4.05 "	7.40 "	" .....Galion.. ..... "	10.00 "	10.10 "
3.13 "	6.48 "	" .....Marion..... "	11.02 "	11.02 "
1.18 "	4.50 "	" .....Urbana..... "	1.18 "	1.00 P. M.
12.46 "	4.04 "	" .....Springfield..... "	2.15 "	1.50 "
11.50 P. M.	3.10 "	" .....Dayton..... "	3.30 "	2.50 "
9.20 "	12.40 "	" .....Cincinnati..... "	6.00 "	5.30 "
	8.30 A. M.	"ChicagoP.Ft.W.&C.Ry "		8.20 "
7.50 A. M.	6.50 P. M.	" .....St. Louis. .... "	7.10 P. M.	7.05 A. M.
6.25 P. M.	6.47 A. M.	" ....Kansas City..... "	8.45 A. M.	8.30 P. M.
5.10 P. M.	7.30 A. M.	Lv..... OMAHA .....Ar.	10.00 A. M.	7.35 P. M.

Train No. 1 arrives at Titusville 1.30 P. M., Oil City 3.40 P. M.

BRADFORD BRANCH.

(12)	(22)	(6)	D'ly. (20)	STATIONS.	Mls	(15)	(23)	(9)	D'ly (21)
P.M.	P.M.	A.M.	A.M.	Ar.] [Lv.		A. M.	A. M.	P.M.	P.M.
3.20	4.01	8.30	6.55	" .CARROLLTON. "	0	9.20	11.04	4.10	8.22
2 59	3.44	8.06	6.39	" ....Limestone. .. "	6	9.43	11.20	4.35	8.42
2.52	.....	7.58	6.31	" .... .Babcock .... "	8	9.50	.....	4.41	8.50
2.45	3.34	7.50	6.26	" .....Kendall..... "	10	9.58	11.31	4.48	8.57
2.40	3.30	7.45	6.20	Lv...BRADFORD..Ar.	11	10.03	11.35	4.51	9.00
1.45	.....	7.35	.....	Ar...BRADFORD..Lv.	11	10.45	1.20	4.55	....
1.35	.....	7.25	.....	" ....DeGolia's....Ar.	14	11.05	1.30	5.03	....
1.30	.....	7.18	.....	" ...Custer City... "	15½	11.10	1.35	5.07	....
P.M.	.....	6 30	.....	Lv. .BUTTSVILLE. "	26½	12.25	2.05	5.45	....
.....	.....	.....	....	....		.....	.....	.....	....

EXTRA TRAIN leaves Buttsville at 8.40 A. M., Bradford 10.03 A. M., arriving at Carrollton 10.45 A. M., *Daily.*
EXTRA TRAIN leaves Buttsville at 1.10 P. M., Bradford 2.15 P. M., arriving at Carrollton at 4.55 P. M.
EXTRA TRAIN leaves Carrollton 11.50 A. M., arriving at Bradford 12.35 P. M. Custer City 1.20 P. M.
SUNDAY SPECIAL TRAINS leave Carrollton at 12.15 and 5.05 P. M., arriving at Bradford at 1.00 and 5.54 P. M.
Train No. 12 runs daily between Bradford and Carrollton.

TRAINS BETWEEN BUFFALO AND BRADFORD.

	(4)	Daily (2)	Mls	STATIONS.	Mls	Daily (1)	Daily (3)	
	P. M.	A. M.				A. M.	P. M.	
	6.50	10.20	78	Ar. . BUFFALO....Lv.	0	8.10	4.45	...
	6.14	9.35	66	Lv.....Hambnrgh .... "	12	8.48	5.28	.....
	5.37	8.49	49	" .....Collins..... "	29	9.24	6.12	.....
	5.30	8.40	46	" .....Gowanda ..... "	32	9.30	6.20	....
	5.15	8.25	41	" ..... Dayton ..... "	37	9.45	6.35	.....
	5.09	8.08	41	Ar.....Dayton..... Lv.	37	9.55	7.03	.....
	4.35	7.30	25	Lv....Little Valley...Ar.	53	10.31	7.46	....
	4.15	7.10	17	" .....Salamanca ... "	61	10.55	8.07	.....
	4.03	6.57	11	" .....Carrollton..... "	67	11.04	8.22	.....
	3.44	6.39	5	" .....Limestone..... "	73	11.20	8.42	.....
	.....	6.31	3	" .....Babcock..... "	75	.....	8.50	.....
	3.34	6.26	1	" ..... Kendall..... "	77	11.31	8.57	.....
	3.30	6.20	0	Lv....BRADFORD...Ar.	78	11.35	9.00	.. ...
	P. M.	A. M.				A. M.	P. M.	

Train No. 1 arrives at Bradford *on Sunday* at 1.00 P. M.

REMEMBER, THAT BETWEEN BUFFALO AND BRADFORD THERE IS NO CHANGE OF CARS!

THE PETROLEUM AGE.

VOL. I. BRADFORD, PA., APRIL, 1882. NO. 5.

PETROLEUM.

CHAPTER V.

From 1864 to Spring of 1865—A Successful Period—Effects of Cheap Oil—Excitement on Cherry Run—First Pipe Line—A Lawyer's Experience—Shafting for Oil—The Pithole Creek Development—Striking of the U. S. Well.

THE year 1864 may be termed the most successful, perhaps, of the petroleum age, so far as net gains to producers are concerned. The average price of oil during the year was the highest ever realized in the history of the business, except the few months of 1859, the year of discovery. As near as it is possible to obtain figures at this remote period, producers received an average of $9.87 a barrel the year round. It was during this year that "the Oil Regions" became so notorious as a producer of millionaires and "oil princes." These seemed to spring up spontaneously. The fields, as developed during the previous three years, had become tolerably well circumscribed. At least, this was the view that the trade took of affairs at that time; and the results of the year's business actually supported the opinion, as the total production of the period was considerably less than for the year previous. It was barren, in a measure, of the large flowing wells which came in so profusely in 1863, and many of those had subsided to moderate capacity.

It may be stated, with a good degree of safety, that the large over-production of 1862 and '63, with the correspondingly low prices, served a greater purpose in establishing the reputation of the article as a superior illuminant, and in causing it to become more extensively known and used than any other known agency. Its value was apparent from the beginning to scientists, but the masses of the people were credulous, and only when its extremely moderate cost was shown were many of them persuaded into its use. Europe became infatuated with it, and in 1864 demanded all the surplus stocks of the previous years. So, too, America, which had been as snail-like in its efforts at the utilization of the product as any other country, began to awake to the importance of the great commercial treasure. Capital was, therefore, at the command of the business in such enormous, such prodigious, proportions, that it seemed, during portions of the seasons of 1864 and '65, that the elements had combined in an attempt to fill the country with paper money, which seemed to arrive in bundles with every gust of wind from any and all directions. During this year but few of those who invested money with a view of immediate gains failed in the object intended. It was, however, a year of disasters and great losses to those who had been persuaded into investing in "wild-cat" wells and undeveloped tracks of territory generally, as also in large oil stock speculations. This was the year (1864) in which oil producers reveled in wealth, and were detected as such by the number and value of the enormous diamonds which constituted a conspicuous part of their elaborate adornments. It was in March of this year that the famous "Johnny Steele" sprang from the position of a parentless youth to the enormous altitude of a millionaire. He had been brought up among the hills of Oil Creek, a few miles above Oil City, through the kindness of the McClintock family, and at the death of the widow, who departed this life, leaving none to inherit her suddenly acquired fortunes but this adopted son. Prior to her demise he had been supplied with his allowances for sporting uses at the hands of his adopted mother. And, it is said, up to that time he had conducted himself as a boy possessed of considerable sense. But if that statement possessed a germ of truth, the space between sense and nonsense may be set down as very limited indeed. This youth, for such he was at the time of his great acquirement, being only 21 years of age, lost no time in becoming conspicuous in the reckless use of money. The farm which he had so suddenly acquired was producing large quantities of oil, the royalty (of from ¼ to ½) of which he sold at big prices—about $5.00 a barrel—and, of course, the receipts were enormous. Young Steele's visits to Oil City, which had by this time arisen to the dignity of the metropolis of that part of Oildom, had become quite numerous. He became the cynosure of all the eyes of the community, and around him he gathered associates who were beneficial to him in neither a moral or financial sense. By these he was persuaded to sell the farm, by which he realized about a million and a half of dollars. This was the event that resulted in the fellow's remarkable and romantic career, a

history of which would make a large volume. Starting out on a "tour of inspection" of the Eastern cities, accompanied by his unscrupulous associates, the manner in which he circulated his easily obtained money is said to have been most remarkable. The purchase of a fine livery rig, and its presentation to the driver; the lighting of cigars with $100 bills; the gifts of diamonds, costing thousands of dollars, to women of the stage; and many other such foolish tricks, are quite familiar to all who have read Oil Region literature. It is, perhaps, sufficient to know that it required less than one year for him to become a bankrupt. His last act was the establishment of a minstrel troupe, which possessed but little merit, and this finally collapsed for want of sufficient funds to pay railroad fare to the next station. Here the chap came to his senses. He had had a dream. He had lived away above earth; his friends had been numberless; matters were now changed somewhat; the leeches who had sucked the financial life out of him crawled away and gave him a chance to think. He thought, and concluded to return to the wife and home he had deserted. He was received with open arms, and stated that playing prodigal was a more satisfactory pastime than fooling around drinking saloons and other resorts of wicked men. Thus ended the millionaire career of this strange man, whose history during this short period, it must be admitted, is as full of romance as Oscar Wilde is full of *utt*erly ridiculous fancies. Steele, for a time, worked by the day for the railroad company, at Rouseville, and afterwards moved to one of the Western States, where his wife, who had saved a few thousand dollars of the great fortune, purchased a home, and but little has been heard of him for many years.

A NEW ERA.

We have now entered a new era in the history of oil developments. Prior to this time there had existed vague ideas or suppositions that there were other localities, remote from Oil Creek and its immediate tributaries, in which oil might be found. But not until the season of 1864 did these fancies assume or develop into something of a substantial character. It was an easy matter for the land speculator to represent the great worth of a tract of territory he might have become possessed of, because of its broken and diversified surface. The question of developments was quite another thing. These, however, were pushed to a wonderful extent, commencing with the early spring months. The disposition to move eastward from Oil Creek became apparent, and but few farms bordering on the Allegany River and Pithole Creek escaped the attention of the "land-grabber." As these farms, therefore, passed into the hands of stock companies, it became necessary, of course, for the purchasers to perform some acts that pointed in the direction of procuring oil in paying quantities. As a consequence, hundreds of wells were started along the river and Pithole Creek, Cherry Run, and intermediate points, during the season. On Cherry Run, which empties into Oil Creek at Rouseville, and receives its waters from the low lands and springs east of Plummer, a large number of wells were drilled, and more than a thousand rigs were built that were never used at all but to be torn down and removed to other localities.

Cherry Run territory, during the early months of the year, was sought after with great avidity. A few farms eastward from Rouseville proved valuable in oil, and for that reason it was expected that prolific territory would be found all the way to the Village of Plummer, and far beyond. A company, styling itself the "Humboldt Refining Co.," erected an oil refinery on the Run, about midway between Rouseville and Plummer. Its capacity is said to have been 500 barrels a week. It received its supplies from the wells in the vicinity; and, it is said, pipes were laid to one or two wells, so that the oil was run direct to the stills from the receiving tanks at the wells. This would, therefore, constitute the beginning of the great Pipe Line system, which is now so nearly perfected, for the transportation of oil throughout the country.

Moreover, a great deal has been written regarding the origin of this system, and certain individuals have been assigned as the inventors, so to speak, who, no doubt, borrowed the idea from experimentors, who have long since become unknown to Oil Region history. The first man to suggest such a thing as the transportation of crude oil from place to place, by the use of tubes or pipes, was a Bostonian, whose name has been forgotten by the writer. He was a young man—an attorney-at-law. He occupied desk-room in the office of an oil firm at Tar Farm, on Oil Creek, during the year 1863. He conceived the idea of using pipe on the surface of the ground for carrying the oil, similar to that used in the wells for raising it from its chambers 600 feet below. He, thereupon, proceeded to Boston, and ordered a large quantity of the material, which was, in composition, a mixture of copper and brass, and was an inch and a half in diameter. This stuff was piled in blocks ten feet square, near

the banks of Oil Creek, where it remained for several years. Whatever became of it is not known by any present citizen of oildom. The one thing needful in the case of the young lawyer was wanted, however, and his efforts proved fruitless. He undertook to make joints by lead couplings, and when the fluid caused a pressure on the pipes these joints "sprung a leak," and he was laughed at for his folly in attempting a worthless experiment. This, we believe, was the first attempt ever made to run a Pipe Line, and the result was by no means encouraging. At another time this subject will be taken up and discussed more fully.

As above stated, the region of country lying between Petroleum Center and the Allegany River, including Pithole Creek, which empties into the Allegany at Oleopolis, was a scene of great activity. Wells were drilled along the banks of the river, and oil was found at various intervals as far up as Eagle Rock, a small town seven miles from Oil City. In most cases, however, the production of the wells was very light, and a greater number of dry holes were obtained than paying producers. Nevertheless, the value placed upon land was very high. A piece of the Collins tract at Oleopolis, consisting of 15 acres, was stocked to a Philadelphia company at $50,000. A wilder and more desolate and ragged-looking region could not well be found than that through which Pithole Creek coursed at this time. Hundreds and thousands of acres of it were covered with rocks and huge hemlock trees, constituting it the very essence of oil territory in the mind of speculators. It was reserved, however, for a baker's dozen of operators, headed by a gentleman named Frazer, to develop the great resources of Pithole, which was accomplished in January of the year which this sketch is rapidly approaching. The result will be mentioned further along.

While the drill was finding its way towards the centre of gravity in every ravine and crooked locality throughout this extensive section, the producers on Oil Creek were reveling in wealth. Property continued to increase in value from day to day, and fortunes multiplied to the delighted inhabitants in such a degree as to nearly turn their heads around on to the other side. From the hundreds to the thousands, and up then to the millions, were the steps that speculators took. The old man Tarr, of the Tarr Farm, received an offer of a million dollars, cash, for his possessions, and he refused, and every farmer of the country surrounding, who had not already settled the question, by selling, resolved also to have a million dollars, or more, for their homesteads. People who had resided along these banks and among the shaggy hills of the vicinity, dieting on rabbit meat in the winter, suckers in the spring, and dried herring in the fall and winter, with just enough homespun to keep them comfortable, awoke, in 1864, to find themselves elevated to the dignity of oil princes, dukes and muldoons. A case came under the notice of the writer where $75,000 was paid for a farm not a thousand miles from Petroleum Centre, and neither the lord of the household, or a member thereof, consisting of thirteen in all, could count the money after reaching the first five hundred dollars. This was the smallest bill of the heap. The old man "guessed that one was all right." The services of Sam were called in. This was the oldest son, a young man of 28, with unshaven face and uncombed locks, who had attended "scule" when Jane Ann McClintock "teached" in the log school house. Sam gave it up as a bad job, and Squire Rickets was sent for to complete the work and see that the money was all sound. The next day the whole family drove to Titusville in a lumber wagon, and actually spent $25 in purchasing calico and other outfits for the old woman and the children. The old man contented himself with a briar-root pipe and a few pounds of twist.

This family, furthermore, was a fair representative of the population of those districts, with now and then an exception. The educational facilities were of the crudest kind, and where schools were sustained at all they were only kept open through the winter months. The advent of the oil industry, however, wrought a remarkable change in this respect. In every thickly populated district, from Shaffer Farm, midway between Titusville and Pet Centre to Oil City, schools and churches sprang up simultaneously with the settling of the invaders, and the country became a hive, where intelligence was cultivated. The bashful children of the rural population mingled with those of the new comers, and it was but a question of a limited period till the rust was removed from the former. It is true in many instances that as soon as the old settlers realized gains from their possessions through the influence of oil prospects, they proceeded to educate their youth, even through the expensive method of sending them to boarding-school.

During the summer of this year the railroad was completed as far as Shaffer Farm, six miles from Titusville, and the former town became a

place of much importance thereby. All branches of business were conducted, and flourished to a remarkable degree. There were four hotels in June, 1864, doing an immense business, and the population of the place was estimated at about 1,400 souls. The territory, surrounding, however, was nearly or entirely worthless. About twenty wells were drilled in close proximity, none of which ever returned value received for the outlay. But it is stated that in no town of its size or duration in the Oil Regions did as much money change hands as in Shaffer Farm. Many merchants from other parts of the country (outside of the Oil Regions), who had become embarrassed in business relations, found a Mecca here. One gentleman of Cleveland, Ohio, arrived one Tuesday evening, in November, with less than one hundred dollars in his pocket, and his business at home on its last legs, and returned, on the following Saturday, with $25,000 in good substantial greenbacks, as a result of one week's speculations. He departed with sufficient funds to redeem his business of its embarrassments, and resolved never again to return to the Oil Country. But these incidents could be given without end or limit, and must be passed over in silence at this time. At the same time an occasional pedestrian was encountered on the highway, who had deposited his wealth where it seemed to promise him but little in return. There is an instance of a gentleman now in the region who, after viewing the situation over, concluded to seek other climes in which to dwell and transact business. He purchased a ticket for Corry at Shaffer Farm. On arriving at Corry he immediately entered the railroad station, and purchased a ticket for Titusville, and he has remained in the Oil Country ever since. That man's record is that of the average oil-man. He has been on the ledge of success, and has also been "flat on his back," to use a vulgar expression. This was about eighteen years ago. Eighteen years of a business life elsewhere, with the exertion of the same amount of energy, would doubtless have placed him in circumstances quite as brilliant as those in which he is found to-day.

Notwithstanding the manner in which the drill was urged during this season, the daily average production of oil was not increased except by spurts, which soon evaporated. The price in June had reached $5.75, and everything indicated a still further advance. The foreign demand continued lively, and it began to be feared that the supply of the article was destined to fall far below the requirements of trade. This had a tendency to still further augment the numbers of new wells. We have, therefore, the picture of wells drilling and rigs building in every corner of the oil universe, as now known, even to Limestone, N. Y., Tidioute, Tionesta, Hickory Creek, Pithole Creek, the Allegany River, and a hundred tributaries. Of course, it required time to develop such districts as Butler and Armstrong, and others, but wells were started as early as '64 in close proximity to all of them. It is estimated that no fewer than 1,000 wells were sinking at the same time during the summer season. Many of these, it will be seen, were located on territory remote from that which produced oil. Of this vast host, however, but few resulted in adding to the prolific area. It is true that some small producers were obtained near Walnut Bend, Henry's Bend, Eagle Rock, and other places along the river, between Oil City and the points named, and down the river to Scrubgrass and Parker, but in such insignificant proportions as to rather tend to drive operators to other sections. Pithole Creek seemed to possess charms for the wildcatter that no other stream of the country could boast, and in various localities, all the way from its mouth to its tail end, wells were projected. In August of this year the "crew" who had determined upon testing the Holmden Farm made the selection of the site which gave to the world a "United States well," and an historical Pithole. It was chance, of course, and chance played into the hands of strangers that time very satisfactorily. The well was not completed, however, till Jan. 6th, 1865, and will be mentioned farther on.

While the test wells were drilling along this Creek, the territory was equally as valuable at one point as the other. In one instance a corporation, known as Faunce, Auburn & Co., started six wells on a small tributary of the Creek, called Hemlock Run, about four miles from the river, and the half dozen did not test an area of ten acres of ground, so closely were they located, and they were all failures. The Phillips Bros. also expended large sums in wells and territory. The Creek rises rapidly, and within ten feet of the surface, at its mouth, a fair specimen of sand rock was found. In taking the elevation to Pithole City it was ascertained that the oil obtained at the latter place was from the same rock that seemed to crop out at Oleopolis. The oil found along the river bank, therefore, was from a formation some distance below the level of the Pithole sand. It is, perhaps, unnecessary to state that all the wells drilled on this Creek, below the bound-

ary of the Pithole City deposit, were worthless, and many monuments stand till this day, in the shape of wasting and decaying derricks.

In this same year, moreover, the idea was conceived of sinking shafts to the oil rock, and three such enterprises were set in motion. These were located, one at Petroleum Centre and two near Tidioute. The former was abandoned after proceeding 150 feet, and one at the latter place was completed, or at least was driven some distance into the sand rock. Specimens of the rock, a foot square, were viewed by the writer. This, however, was in the spring of 1865. It was owned by the New-York Mining Co. The aim of the company was to tunnel the rock after going a certain distance into it. An explosion, which resulted in the death of the foreman, Mr. Hart, caused an abandonment of the scheme, and the shaft was a total failure. After Mr. Hart's death, nobody could be persuaded to work on the premises. The explosion was caused by a workman dropping a lighted taper into the mouth of the cavity, to test its safety, preparatory to descending to proceed with the work. The explosion followed immediately, and Mr. Hart, who, it appears, occupied the most dangerous position, was thrown to the bottom of the hole, a distance of a little over 120 feet. The awful calamity cast a gloom over Tidioute, as Hart was a most worthy citizen.

During the summer and fall of this year (1864) it is estimated that over $100,000,000 were invested in oil lands, the greater part of which still remains invested. Not a single farm from Oleopolis to Pithole City, and several miles beyond, escaped the attention of the ferocious land-grabber. Some of these farms were stocked at rates that would cause even a Jay Gould to shake in his slippers. One hundred and twenty-five thousand dollars would be considered a small price for a hundred acres.

On Oil Creek, many of the large flowing wells obtained in the years previous, had, in the fall of this year, subsided to very moderate producers, giving the owners of small wells better chances of success, and a more satisfactory division of profits. The total production of this year is estimated—or tabulated from the most reliable data obtainable—at upwards of 22,000,000 barrels, and the consumption about 20,000,000 barrels. During the year no very important developments occurred, and January, 1865, arrived with a prosperous business in every branch of the trade. The ruling price for oil was $11.00 a barrel. Soon, however, after the striking of the U. S. well at Pithole, which started producing at the rate of about 700 barrels and increased afterwards to 1,100, the market again dropped several dollars a barrel. All eyes were now turned toward Pithole and the well just named. The locality became the Mecca for all pilgrims of the trade, and others, curious to see the fresh discovery. This well added fresh impulse to the excitement in that latitude, and the spring of 1865 opened with a rush of people to that center unequaled in the annals of Oildom. In a future chapter the subject will be treated comprehensively by one who had experience.

PETROLEUM GAS.

IN the preceding numbers it was our constant effort to explain as clearly and briefly as possible the entire practicability of reducing Petroleum to a fixed and permanent gas for illuminating purposes. The real intention was not to presume upon the intelligence of those who had given the subject careful consideration, but only to disabuse the people of Oildom in regard to the strange delusions which seem to have crept into their minds, to the total perversion of their proper understanding of this question. It has been stated that petroleum gas works have been in successful operation in various sections of the country for years. A practical demonstration of its working can be seen at any time by anybody caring to visit us at Tidioute. Digressing for a moment, it is deemed prudent to state forcibly that we have no personal interest, claim or title in, or to any particular method or process, nor have we any predilections in *favor of* any particular process, except as experience has shown to be the best. This much is said here, and now, to anticipate the possible inference that we are *advertising* some scheme or method of our own. Daily observations during the past nine years' experience with the Petroleum Gas Works at Tidioute have enabled us to note fully its practical workings and superior results. It remains to be stated that Petroleum Gas, being subjected to a much greater heat than is applied in the conversion of coal gas, becomes more thoroughly fixed than the latter, and may be said to be *practicably incondensable.* This is no reckless assertion volunteered for effect; it is simply the net result of careful examination. The Tidioute Gas Works are now nine years in operation. We have never found a particle of condensation in the mains, drips or service pipes in all this time, nor have we found even the show of it at the "out-let" pipe. If any coal gas works in this

country can boast as much for their method let it be shown. We have in the past subjected this gas to a pressure of *fifteen atmospheres*, for the purpose of compressing a sufficient volume to be conveniently carried about in a small copper cylinder. Even at this pressure there was no perceptible condensation or diminution of luminosity. Because of this well-known superiority, Petroleum Gas has been successfully adopted to the lighting of railroad coaches — coal gas having been tried, and its use abandoned. We are aware that numerous objections are raised against the use of Petroleum Gas. We will not presume upon the intelligence of AGE readers by seeming to arrogate to ourself any peculiar aptness in the discussion of this question. We will not anticipate objections, but will be most happy to treat them, when they do appear, in all fairness and candor: provided, of course, the objections are such as we can comprehend, or are such as to merit serious thought. As a matter of fact, we do not anticipate any substantial objection, because we have been careful to claim only the minimum results, and those at all familiar with the subject will concede this. To illustrate what is meant by *substantial* objections, we will instance the recent railroad disaster at Spuyten Duyvil, N. Y. The coaches of this train were lighted with Petroleum Gas, compressed in cylinders, and suspended beneath the cars. A reporter interviewed the railroad company, to ascertain if *Petroleum Gas* was the remote, if not the immediate, cause of the coaches in question taking fire. The foolish idea seems to prevail, to no small extent, that gas made from petroleum is more liable to produce an explosion than is the ordinary coal gas. It is really too bad to waste time in endeavoring to explain away such unreasonable fears, if indeed, as such, they are entertained. But we will briefly enter into it for this time. Is Petroleum Gas explosive? Yes, under certain necessary conditions, as is also all illuminating gases. What are these conditions? First, let us determine what is meant by an *explosion of gas?* It is instantaneous combustion. What is combustion as used in this sense? It is the chemical union of the oxygen of the air, which supports combustion, with the combustible hydrogen and carbon of the gas—both are absolutely necessary to the result. There is as much propriety in stating that oxygen and nitrogen composing the atmosphere are of themselves explosive, as that any illuminating gas composed of hydrogen and carbon is by itself explosive. Once for all, then, let it be known that Petroleum Gas is no more explosive than other illuminating gases, with this difference in its favor, that it possesses a peculiar, but by no means unpleasant, odor, that makes a leak easy of detection. It is not the purpose of the writer to trespass upon the premises left vacant for the better explanation by a more competent person of the *fuel* question; but an instance occurs to our mind of the great difficulty to be contended with in bringing the question to the attention of those who must needs be (did they but know it) greatly interested, therefore we will trespass. Some time in the year 1873 we called upon Putnam & Co., horse-shoe nail manufacturers, Neponset, Mass. We were induced to make the call from information obtained to the effect that Putnam & Co. were desirous of obtaining some better method of heating in the process of manufacturing these nails. They were at this time (1873) using Anthracite Coal, in connection with the "blow-pipe." We met Mr. Putnam, who, by the way, received us kindly enough until he gathered from our conversation the exact nature of our visit, whereupon he evinced the New England business man's dread of bores. Glancing hurriedly about the office to make sure a place of hasty exit, we continued to press our subject, endeavoring to explain the why and wherefore of the question. Mr. Putnam, assuming a stern countenance, informed us that he had experimented with coal gas for heating purposes in this establishment for twenty years; that he had expended $20,000, and the thing was a failure; therefore, it was no use to spend time on his account. We continued to urge the superior properties of petroleum; agreed to make the experiment at our own cost, etc., until, finally, in a state of desperation, he said, "Go on and make the experiment." The *experiment* enabled Mr. Putnam to distinguish between coal gas and Petroleum Gas (*Petroleum was reduced to gas as for illuminating purposes*) for heating purposes, and enabled him to make not only a large saving of expense, but also to improve very much the *quality* of the iron. This concern built works for their own use, and have continued the use of Petroleum Gas in the manufacturing of horse-shoe nails, successfully, and very profitably, to the present day.

Now, what is the moral? Simply this: that the merits of the question are unknown, and therefore cannot be expected to influence those whose interests would otherwise urge its adoption. The article itself will, when properly used, fully sustain the highest merit claimed for it.

But it has to enter into competition with other articles used for like purposes, and long since in possession of the markets. It is only reasonable to expect the strongest kind of opposition to the use of any new article designed to supplant the old. As stated, this opposition is reasonable and honorable, but it is no part of our duty to withhold our support, where, from the nature of the case, our very best efforts are needed to advance our own cause. How best to do this? At a future time we may volunteer a suggestion or two. At present, we make a general suggestion. The population of Oildom is very largely made up of enterprising emigrants from almost every State in the Union. Their acquaintance and information are varied and extensive. A little reflection will show how much valuable assistance they might render the cause, by including in their daily correspondence a reference to such matters as are now pressed for their earnest consideration. M. H. B.

THE REFINED TRADE IN AMERICA.

IT is with great difficulty that facts relating to the condition of trade in refined oil in America are obtained. As to the business of manufacturing the article it is not so troublesome. It is barely possible, however, that there are a few prominently connected with the latter branch of the business who are lacking, to a certain degree, in knowledge of the position refined oil maintains as an article of American trade. All are aware that it is used frequently as an advertising medium to aid in the sale of other merchandise that may "drag heavily" in the market. And, though all are aware that it is finding its way as an illuminator into every corner of the Republic, as well as the Republics and other governments adjoining, but few are possessed of any data whatever tending to enlighten the public on the subject of consumption. These few are to be found among the managers of one corporation, who are at present controlling this branch of the trade, and it is extremely difficult to force this intelligence from them. However, the keen eye can discern from daily transactions in every State that Pennsylvania Kerosene, as it is commonly termed, is becoming very popular, and is being more widely disseminated among all classes with every lunar change. It is rather humiliating to conclude that Americans have been more dilatorious in applying petroleum to the various uses to which it is adapted than foreigners have been. This, however, does not touch the vital point at issue. There is still the question of "the unknown" quantity that America uses, and is liable to use during the years before us. Last year (1881) it is fairly estimated that the home trade or demand amounted to a little over 18,000 barrels a day, being about 20 per cent. of an increase over the year previous. This, too, in face of the fact that owing to exorbitant rates for transportation, and other causes, much of the oil that has been used in the far Western and Southern States has retailed at from 45cts. to 75cts. a gallon. This is looked upon by those who occupy a more favorable position, as regards obtaining supplies, as an extremely elevated schedule. But they do not stop to consider that they pay upwards of $8.00 a barrel for every barrel of 150° fire test oil used here in the region of production, where the crude costs only two cents a gallon or $1.05 (pipage paid oil) a barrel. Allowing 15 per cent. for waste in manufacturing, (and it is stated that the waste is much less than this) and there is still a margin between crude and refined of $7.35. This is exactly what the consumers here in the region are compelled to pay for light. When the calculation is made at the rate of from 45cts. to 75cts. per gallon, we begin to lose our senses, and wonder why it is that there has been this enormous increase in consumption. The truth is the people *will* have it at any price within the bounds of reason, or at a cost 50 per cent., and perhaps 100 per cent., above that of any competing substance.

In the calculations, therefore, of the future, it becomes necessary to take into consideration the fact that a similar ratio of increase in the future to that of the past, entails a most wonderful difference in the quantity that will be found necessary to supply the wants of the trade. As for instance, 15 per cent. increase on 14,000 barrels equals 2,100 barrels, while upon 18,000 it is 2,700 barrels, and so on *ad infinitum*. It would therefore appear as only a question of time, perhaps a decade, until America itself will absorb more oil than she produces to-day. Supposing that the 15 per cent. ratio of increase should be maintained for ten years, this country would at that time be consuming 88,287 barrels a day. Ten years is comparatively a short period. Men often make investments not expecting to realize much from them for a quarter of a century. With this view of the case it would appear as if the trade in petroleum in America was only in its infancy. It is a mere babe compared with what it will be when the causes which combine to prevent its rapid growth shall have been ascer-

tained and removed. Special transportation corporations will probably extend their conquests into the territories, which now only receive oil through the agency of the local railroads, and where these are absent, the ordinary stage-coach. With the extension of the great railroad systems of the West, Northwest and Southwest will come largely increased demands for the product. All that is needed is that the manufactured oil of the future shall continue to be of that superior character possessed by the oil of the present day. The high grades which are now so extensively used are almost absolutely safe under any and all circumstances, and this is one of the most pleasing features of the trade to-day.

PETROLEUM AS FUEL.

IT is to be regretted that petroleum has not been more extensively used than it has in this country as fuel. Of all the railroad locomotives which traverse this great nation but one has yet been fired by the cheapest fuel the world ever saw—petroleum at 80cts. a barrel. Then not only should the cheapness of the article be taken into account, but also the pleasure to passengers, which would be so largely enhanced by its use. We venture the assertion the roads which first adopt it will gather the "persimmons" during the heated season especially. Here in the Oil Regions passengers on railroads are smoked, choked and blackened with the dirtiest kind of coal dust and filthy grit imaginable, while trains wind and double themselves around curves and climb the highest mountains, profusely puffing, and snorting, and blowing out their infernal refuse. All this, while the cleanest and cheapest fuel lies stored by the millions of barrels along the railroad tracks. Nothing but careless shiftlessness on the part of railroad companies could prevent them from procuring appliances for its use at once. Over in Russia, where the oil product contains less naphtha than the oil of this country, several railroads are already using it to the greatest advantage. The means used, as any one can see, are quite crude. A large tray of cast iron is fitted in the ordinary fire-box of the boiler over the bars, and above this tray is fixed a grating of wrought iron pipes placed crosswise and perforated with a number of holes in the lower side. By means of a larger pipe these pipes communicate with a cylinder of tin in the tender of the locomotive. The cylinder is divided into two unequal compartments, one containing naphtha and the other water. The flow of these liquids from the two compartments into the funnel end of the pipe leading to the hollow grating in the fire-box is regulated by a valve. The water acts as a pulverizer, and separates the stream of naphtha, bringing, in this way, a larger quantity of air in contact with the fuel, and so, it is said, causing more rapid combustion and increased heating power. The locomotive experimented upon gave excellent results, and the railway company at once applied to the government for authority to use the system of heating on train lines. The use of naphtha in some parts of Russia will be more economical than either coal or wood, even while the price per barrel is much greater than the American commodity. Why is it that foreign nations lead this country in the utilization of its own products, especially petroleum? It is argued by steamboat and railroad men that the price of oil is too uncertain; that the danger of sudden and extensive fluctuations would be incurred in adopting it as fuel. But, even in that case, they would undergo no serious inconvenience. The loss of a few pipes and the contrivance for forming perfect combustion would be the sum total. On the other hand, there seems but very little danger of an enormous advance for some considerable time to come. Several years of low prices have passed during which time the article should have been used on every railroad of the country, and every steamship and steamboat plying American waters.

HOW TO PREVENT SCARS.

IN the Oil Regions, where so many accidents occur from explosions of gas and oil, by which many persons become scarred for life, the following from the *Magazine of Pharmacy* may be worth preserving:

The cicatrices, scars, or marks left by various diseases, burns or wounds of divers kinds, are often less obstinately permanent than is generally supposed, and from some facts which have lately come under our notice we are inclined to think that their prevention or removal in many cases may be accomplished by some mild but effectual antiseptic.

Among the exemplifications of the efficacy of the formula we are enabled to lay before our readers, is the case of a gentleman of our acquaintance, whose face was so severely burnt by the violent spurting of a quantity of melted lead (owing to a workman having incautiously dropped a *wet* pipe into it), that his eyes were only saved by pebble spectacles from utter destruction.

At first, of course, carron oil was the sole

application, and as for *weeks* afterwards particles of the granulated metal had literally to be dug out of the flesh, a deeply-scarred countenance was naturally predicted by all, except the patient himself. One mark of an almost imperceptible character alone remained after the expiration of six months, owing, as our friend says, to the whole face being bathed twice or three times a day, as soon as the oil treatment could be discontinued, with a lotion of the simplest character, as is readily seen by glancing at its constituents.

Lint soaked in the same solution and allowed to remain on some little time will frequently mitigate the visible results of small-pox, and we have known one case of ringworm treated in this way to leave no scar whatever, while a sister of the latter patient, who had had the same disease in a lesser degree, but had not employed this lotion, still retains the evidences of the fact.

The following is a convenient formula: Borax, half ounce; salicylic acid, 12 grains; glycerine, 3 drachms; rose-water, 6 ounces. Make a lotion.

OIL DISCOVERIES IN GERMANY.

THE story of the excitement over the discovery of petroleum in Germany reads like a repetition of the history of the early days in Pennsylvania, when any man who made himself conspicuous by the size of his diamond shirt-pin, was at once set down as one of those who had "struck oil." As usual, speculation runs ahead of legitimate development, and the sale of a few carloads of the Peine refined oil filled the Germans with the hope that these wells will soon yield enough oil to supply that country. This is an extravagant expectation. In Georgia and North Carolina the native has a way of making a gold mine by loading a shot-gun with gold-dust and shooting the charge into the ground; but we cannot believe that the phlegmatic Teutons are up to such wiles as stocking petroleum wells with oil from Pennsylvania!

THE fourth chapter on "Petroleum Gas," by Capt. M. H. Butler, in this AGE, will be found very interesting. The captain's labors in the direction indicated are reaping fruit. He has set at least one Eastern manufacturer on the right track; and his suggestion to the business men of Oildom, who have emigrated from other States, to spend sufficient time to write to the manufacturers at their respective homes of the superior advantages of Petroleum Gas for heating purposes, comes in where it should do the most good. Let it be heeded.

PREHISTORIC RACES AND THEIR OIL WORKS.

PROF. John S. Newberry recently lectured before the Academy of Sciences in New-York on the "Prehistoric Races of America." The *New-York Times* gives the professor credit for furnishing the finest and most lucid summary that has yet been given of the present state of our verified scientific information as to the mound builders, the house builders, the early oil diggers, the Aztecs of the South, and the condition of the arts of civilization among these representatives of lost types. So many ingenious scientific romances have been elaborated by speculative antiquaries as to the origin of these races and their possible relation to the prehistoric types of the Old World, that such a *resume* as Dr. Newberry gave of what is actually ascertained or fairly inferable from the data of mounds, pottery, inscriptions, textile fabrics, and other remains, is peculiarly valuable to the general student, who, bewildered by speculative theories cleverly interlaced with facts, and sadly puzzled by remote inferences stated as verified information, finds himself without a starting-point for the formation of an opinion. While not sharing in the fanatic enthusiasm that places these races in advance of the contemporary civilizations of the prehistoric races of Europe and Asia, and while taking no part in the endeavor to trace a relation between them, Dr. Newberry concedes their progress in certain arts and the magnificent scale upon which their public works were constructed. He regards the mound builders of the Valley of the Mississippi, among whom the symbolical form appears to have been neglected in the construction of their works of sepulture, and the races further West, who built in the forms of birds and now extinct animals, as belonging to the same primitive stock, now probably represented by a few tribes of Western Indians — Indians so called for want of a better name, but differing in ancestral descent from the savage hordes to whom that term has been appropriated as widely as the Arab differs from the Persian. Beyond doubt the responsibility for the construction of the ancient pits that exist on Oil Creek is traceable to the same people. The ordinary Indian as he is now found never took part in as laborious an exercise as that of digging immense pits in the earth for the purpose of storing a valuable article of commerce. He has always been too lazy, and too much given to scalping, to engage in legitimate undertakings.

MOTIVE POWER AT PRESENT AND IN THE FUTURE.

THE increasing development of manufacturing industries, says the *American Inventor*, and the increasing transportation needed for purposes of foreign and domestic commerce demand increased motive power, and lead to the consideration of the question whether our present resources are ample for all time, or will have to be supplemented by some yet undiscovered source of energy. Water-power, the cheapest of all, exists in enormous amount along the streams of the Alleghany range from Maine to Alabama, and is, of course, secure from any considerable diminution, but cannot be made available for more than a fraction of the immense power ultimately needed. Our forests are not destined to survive long the heavy demands already made upon them. We are compelled for the immediate future to place our main dependence upon coal—anthracite and bituminous—of which our supplies are believed to be manifoldly greater than those of all other nations combined. The latest census bulletin estimates the total net production after 1880, at but 4,900,640,000 tons, and the output of that year, it adds, can be maintained but 146 years. The area of the bituminous fields of the United States is 200,000 square miles, containing 600,000,000,000 tons, or enough to last twelve hundred years if the annual consumption were limited to 50,000,000 tons. A coal famine need not be dreaded as a pressing danger in this country, if we are content to use the bituminous variety. Then we have our vast petroleum resources to exhaust before the danger is incurred. Long, however, before our supplies of fuel are consumed it is more than probable that other sources of power will be discovered and perfected. It is already easy to convert the power of a waterfall into electricity and that into heat or light. Not only so, but the properties of electricity are such that we may convey it hundreds of miles and apply it, by means of suitable machinery, to the performance of all kinds of work. It has already been applied in Paris to the propulsion of machinery for manufacturing delicate mathematical instruments, to the propulsion of cars, boats, velocipedes, etc. There is no inherent difficulty in utilizing the vast power now wasted on nearly all rivers by means of water-wheels which will be used to generate electricity, which in turn may be carried on radiating lines of wire to all parts of the adjacent country, to be reconverted, when needed, into mechanical power for manufacturing or railroad purposes. And so of every creek and streamlet, and even the wasted energy of the tides. It has been the world's experience that for every anticipated need of the character here discussed some remedy is in time supplied by the widening ingenuity of man.

THE NEW FIELD IN BUTLER CO.

FOR more than a year the impression has prevailed in Western Butler County that there existed an oil deposit west of the Village of Butler, and, of course, some distance west of all former developments. This idea assumed practical form about a year ago, resulting in the completion during the summer of 1881, of what is known as the "Bald Ridge" Wells, Nos. 1 and 2. These are very small producers, and are situated about 6 miles west, and a little south of Butler Village. The fact of their obtaining any oil in the latitude caused some apprehensions of the existence of at least a limited pool. Considerable land changed hands in the vicinity as the result, and large lots were leased for immediate operations. The vital question to be determined was the direction to pursue in order to hit the rich deposit, if any existed. McBride and others chose the west side of the little wells, and a short time ago completed a duster. Simox and others went east a hundred rods or less, and obtained the well which is just now attracting considerable attention. It was put into practical order on the 4th inst., and in 24 hours thereafter yielded over 100 barrels of oil. Salt water, found at a depth of almost 1400 feet, in the second sand, retarded operations considerably, and caused a great deal of trouble, even after the regular oil rock was reached, between 1600 and 1700 feet. The new strike has given rise to much speculation as to what the well develops. Some are of the opinion that it is one of the numerous links which seem to form a kind of chain, extending from Keno on the Allegany River, through Bradensburg, Foster, and Bullion; that it is very limited as to area, etc., etc. If it should turn out to be one of the succession of pools, it would doubtless prove, as stated to be, of moderate dimensions so far as the area is concerned, as none of the deposits named on this chain covered more than 250 acres of land. On the other hand Baldridge is supposed to occupy a position too far to the eastward to constitute such link, and that it is a deposit belonging exclusively to Butler County. The new well may be put down as a good 25-barrel

producer after settling to its monthly work. What the result is to be is at present only conjecture. The expensive drilling, however, occasioned by hard rock and salt water will have a tendency to prohibit a very rapid growth of the daily yield in that region, and the alarm caused to the trade by the strike in less than 3 months might pass away.

OBITUARY.

ON Saturday morning, March 24th, Mr. Wm. MaGill, an oil operator of the McKean district, at his quiet home at Seagertown, Crawford County, Pa., passed peacefully from earth in the prime of life, being but little over 40 years of age. He had been suffering for some time from a consumptive disease, and had traveled much in the South and West for relief, and finding that his end was drawing near, returned to his country home to close the books in the presence of his family. Mr. MaGill had served F. Prentice, while the latter was a prosperous producer in Butler County, as superintendent, and afterward came to the McKean field and engaged in the oil business for himself. In this he was quite successful. He was a man who commanded the respect of all who knew him. He left us at the life-hour of noon, with prospects brighter than many who felt sorrow at his departure, and while for all Time has a similar fate awaiting, yet we must join in the sad refrain of those who mourn his sudden taking off. He still lives.

MR. JOHN BENNINGHOFF, who was owner of the famous Benninghoff farm, just above Petroleum Centre, which produced so largely in 1867-'8 during the second excitement in that latitude, died at his home in Greenville, on March 19th, last. Mr. Benninghoff from royalties and other sources acquired a large fortune, a large share of which he kept in his house. This became known to a number of roughs, among whom it was supposed was a son, robbed him of $200,000 during one night. The money was never recovered, nor were the perpetrators brought to justice. Several were arrested on suspicion, and two stood a trial at Franklin, Pa., for the robbery. They were not convicted. Mr. Benninghoff was a man of singular views regarding men, and would trust nobody that he did not know fully. He retained a sufficient amount after the great steal to purchase a good home at Greenville, and died there in peace, surrounded by his family and friends, who deeply mourn his demise.

IMPORTANT OIL CONTRACT DECISION.

AMONG recent legal decisions, the following is given by *Bradstreet's:* "An oil company had a contract with a railroad company to transport and deliver its oil at its warehouse, and it assumed all risk of loss by fire while the oil was in the custody of the railroad company. Certain oil in a barge was destroyed at the oil company's warehouse dock, by a fire which originated on a tank boat belonging to it. In an action for the freight on this oil, New-York Central & Hudson River Railroad Company vs. Standard Oil Company, the defendant set up as a defense that, as the oil had not been delivered, it was not liable for the freight; and the New-York Court of Appeals, on January 17, sustained the defense. Judge Danforth, in the opinion, said: A delivery at the warehouse was essential to the performance of the freight contract, and without that, or a lawful excuse for the failure, the agreed freight was not earned. The risk of loss by fire assumed by the oil company does not entitle the carrier to freight for oil burned before its delivery. The Judge also said that the charges made by a co-contractor could not be recovered in this action.

THE CANADIAN OIL FIELD.

AT the present time the Canadian field is producing about 35,000 barrels of oil a week. This has been the rate at which it has been estimated for some time past, and it changes but little from month to month. The wells are very small when compared with those of Pennsylvania, as a two-barrel producer is considered quite a well. From 15 to 40 new wells are kept in operation constantly. The new wells start off but little better than their regular daily yield afterwards.

The largest well in the district to-day does not exceed 35 to 40 barrels. A short time ago, however, we had one well that yielded between two and three hundred barrels, and it was located in the oldest territory in the region.

In this field there is a great deal of "jerking" done.

Petrola is rapidly becoming the great refining centre of Canada. Its railroad facilities are becoming superior to any other town in this part of the Dominion. We expect to have two new roads running through here in a very short time, which will make four altogether. Prices for oil continue about the same as for the past 60 days, viz.: $1.50 for crude, and 15c. to 15½ for refined. Drilling has been retarded considerably of late by the excessively bad roads. As soon as spring opens, however, there will be a revival. L.

INFORMATION BY MAIL.

THE FIRST OIL PRODUCER.

BRADFORD, PA., April 5th, 1882.

Editor Petroleum Age,—A great amount of newspaper controversy has been indulged in of late, with reference as to whom should belong the credit of producing the first oil, refining the first oil, or introducing it at home and abroad. No one will dispute that Col. Drake was the first man to drill successfully for oil. That point, at least, is settled beyond dispute. There is, however, a producer of oil now living, who was a producer in 1853, and has been continuously a producer of petroleum ever since. Mr. Charles Lockhart, of the Standard Oil Co., of Pittsburg, is the man. In 1853, Mr. Lockhart was the owner of a salt well at Tarentum, Pa., which produced considerable oil. To dispose of it at what it was supposed to be worth as an external application for certain ailments required some negotiations with Mr. S. M. Keir, of Pittsburg. A bargain was made, by which Mr. Keir agreed to take the entire oil product of the well at 62½ cts. a gallon. About 7 barrels, or 279 gallons was purchased by Mr. Keir in 1853, which he disposed of by bottling and labeling in an artistic manner, and warranted to cure cuts, sprains, bruises, burns, scalds, rheumatism, etc., etc. In 1855, Mr. Lockhart sold to Mr. Keir 142 barrels in all, at an increased price of 66⅔ cts. a gallon, or 3 gallons for $2. In 1858, he sold 348 barrels at the very handsome price of 66⅔ cts. a gallon, or $28 a barrel. The salt well was paying far better than an average oil well pays now. Mr. Keir finding it difficult to work off such a vast quantity of liniment, made an effort to refine it, by building a one-barrel still on Seventh Avenue, near where the Pan Handle Railroad now crosses that thoroughfare. Meeting with partial success, Mr. Keir made plans for enlarging his works so as to be able to take Lockhart's oil, when the news of Drake's success on Oil Creek flashed over the country. The new era of oil producing set in, and among the first to visit the scene of the great excitement was Mr. Lockhart. Drake's Well on Watson's flats was struck in August, 1859, and the following March the steamer Venango, Captain Rannels, commander, brought down the river 65 barrels of petroleum, consigned to McCully & Co., of whom Mr. Lockhart was a member. This oil was the product of the Albion Well, and was owned by Lockhart and his associates. In the month of May following, Mr. Lockhart made a trip to Europe, and took with him samples of our crude and refined, nicely packed in tin cases, made expressly for the purpose. He showed it to various merchants in hopes of introducing it as an article of commerce. One Liverpool merchant called it "Birmah Tar" as soon as he smelled a can of the crude, and it was hard to convince him that it was an American instead of a Birmah product. In the various commercial cities of England, Scotland, France, and Germany, the oil was exhibited, and it is presumed not without good results, as our subsequent large shipments would indicate. From 1853 to the present day, nearly 30 years, Mr. Charles Lockhart has been a producer of oil, and is one yet. Some persons desirous of notoriety are blowing their own horns, telling their early exploits in introducing our great staple, but to this unassuming and unostentatious man belongs the honor of being the first and also the oldest living oil producer, one who was engaged in the business before Drake, and who has been continuously a producer since, and still is the owner of a good producing property.

LEX.

PITTSBURG, PA., April 4th, 1882.

Editor Petroleum Age,—This city, once the center of the largest refining industry in the country, is now very dull so far as the oil-refining interests are concerned. The great difference between the price of crude and the price of refined, which, happily for the refining trade, existed a year or so ago, was the incentive which caused so many "independent" or outsiders, to start up a number of refineries, in hopes of making money faster than it could be made producing the cheap stuff, or even more than could then be made in other ordinary business investments. The price of crude at that time was nearly or quite the same price it is now, while the price of refined was about one-third higher than present market quotations.

This very profitable margin was an inducement for those who had an idea that they could manufacture a good article of refined oil, for which they would find a ready market. The discouragements which the novice in any business finds continually coming up when least looked for, were doubled in the case of the new refiners. All the good men who were skilled by years of practice were picked up long before, and in the enjoyment of profitable positions in the employ of the Standard Oil Co.

The new men had to go through a severe schooling in the only sure course of study, that

of experience. In the meantime the price of refined was gradually lowered, until to-day there is no margin which will warrant the outlay of a dollar in keeping the refineries running at all.

There are only three "outside" refineries in this city at the present time, viz.: The Waverly, The Bear Creek Refining Co., and the old established refinery of D. P. Reighard, known as the Empire. The latter has always maintained itself as an independent concern since its establishment in 1866, and a profitable one it has been, although it is not running now. Last summer there was a squeeze in oil barrels, as the coopers had contracted ahead for all they could turn out until January 1st, 1882. In order to overcome this obstacle, Mr. Reighard erected barrel works sufficient to meet his own requirements, and that of the other "outsiders" as well. Every product of petroleum is manufactured at the Empire works, and with an acquaintance and experience gathered during an active business of sixteen years, yet Mr. Reighard finds it more profitable to keep his works idle than to run them, and he will not be likely to start up again for an indefinite period.

The Waverly, with Mr. S. M. Willock at the head of affairs, is running lightly. Some improvements are being made about the grounds and buildings, while there is time to perfect the details. The Bear Creek refinery, with bluff Ben Campbell at the head, is running, but not to its full capacity. Said Mr. Campbell to your correspondent, in answer to the inquiry how he liked the new business, "I like it very well; it is good business if it was only profitable. "However," he continued, "it is far more profitable than fighting the battles of producers, and getting curses instead of thanks for your work in their behalf. Why sir, some of your Bradford producers were mean enough to say that I had sold out to the Standard for fabulous sums, and that I put the money in my pocket."

When asked what he thought the producers' movement of that memorable time accomplished, he replied, "The Tide Water Line has been laid, which remains a competitor, and the freight discriminations, of which we always complained, have been removed. I can ship my oil in almost any direction, just as cheap as the Standard Oil Company, and surely that was not a barren victory. For my part," he continued, "I am through fighting the Standard Oil Co. My ambition is to make the best oil in the world, and to show you what is thought of my efforts in that direction, just read that," and he handed the writer the following notice, taken from a late issue of the *Commercial Gazette* of this city:

"A DESERVED COMPLIMENT.

"We take pleasure in reprinting from the *Oil, Paint and Drug Reporter* of the 8th inst., the following notice of one of our Pittsburg refineries:

"'The refined petroleum from the Bear Creek refinery at Pittsburg bears the reputation of being unsurpassed by any illuminating oil ever made. All of the crude used in this refinery is from the Parker field, where the Bear Creek Company are among the largest producers, and this superior crude, coupled with real care in refining, and an honest desire to make the best product that can possibly be turned out of a still, has resulted in a refined oil which may fairly be considered perfection.'"

"Is not that something to have accomplished in my new departure?" He continued, "why I might have made a fortune instead of losing one if I had been as avaricious and devoid of principle as some of the producers who went to the Bradford field and rushed the drill and talked about me without cause." There is no doubt but Ben Campbell tells the truth about the average producer. He is the same bluff, hearty, honest man that he has always been considered by those who know him best. Taken altogether, it is a sad commentary on what the refining industry of this city was once, when there were more than sixty refineries, with a capacity sufficient to refine the entire crude product of the regions.

Now they are nearly all dismantled, and this important industry removed to New-York, Cleveland, or some other favored locality, and Pittsburg has lost it forever. OCCASIONAL.

MONTHLY SALES.

FOLLOWING are the monthly sales of the Bradford, Pittsburg and Oil City Exchanges during the year past.

1881.			
March,	6,999,000	5,717,000	16,872,000
April,	9,792,000	4,753,000	17,209,000
May,	5,150,000	3,968,000	12,221,000
June,	4,889,000	3,848,000	10,562,000
July,	8,183,000	4,935,000	15,730,000
August,	13,406,000	6,733,000	18,287,000
September,	25,023,000	12,251,000	29,110,000
October,	10,129,000	7,399,000	19,643,000
November,	17,939,000	8,998,000	23,622,000
December,	26,258,000	11,545,000	19,681,000
1882			
January,	23,885,000	11,441,000	27,163,000
February,	19,412,000	9,153,000	22,207,000
March,	27,467,000	13,208,000	29,448,000

THE oil of the northern field is like pure wine; it improves with age.

THE FORESTVILLE DEVELOPMENT.

IT has been supposed by outsiders and the oil trade generally that the failure of the well recently drilled near Forestville had put an eternal quietus on the spirit of adventure which, for a season, effectually pervaded that community, but in this they have been mistaken. Only a few days ago an important gathering of the resident farmers occurred at Smith's Mills, to hear a proposition from the oldest belt liner of the Oil Country, Mr. C. D. Angell, regarding the propriety of placing their lands in his possession at a reasonable royalty, for the purpose of making other and more satisfactory tests. Mr. Angell has kept a careful record of the rocks found in the well already drilled, and has also had the oil analyzed. While the sand rock, from which the oil was obtained, found at a depth of about 1500 feet, was not of that species that warranted hope of rich deposits in the immediate vicinity, yet it gave evidence of the existence of more productive formation that might some day be revealed through the proper effort. The character of the oil also satisfied him still further on this point. He now proposes drilling a number of test wells, providing all the land in a certain line, extending some 12 miles east of the present failure, and including a few miles in width, is assured under lease. The farmers are considering the proposition with considerable favor, and will, doubtless, form a compact, and enter into an arrangement on the terms indicated. Of course, it may require the sinking of a large number of test wells to ascertain the relations the section bears to an oil field. Mr. Angell desires to have such control of the territory as would prevent any undue excitement, whereby the price of oil would be injured. Should the scheme prove successful to any degree it could not, and would not, under such circumstances, have any influence on oil values. He is just the man for the citizens of that section to deal with.

KIND WORDS.

PETROLEUM AGE again, and better, and more solid than ever! P. A. we welcome thee!—*Corry Enterprise.*

IT is handsome and comprehensive, and one of the finest printed publications in the country. —*Sunday World.*

THIS popular magazine improves with every successive moon and stands to-day one of the best periodicals in the Oil Country. As a magazine it has never been equaled in the oil country. The March number, which is before us, is replete with ably-written articles on topics that interest everybody in the whole Oil Region. It should be read to be appreciated.—*Oil Echo.*

THE PETROLEUM AGE for March is well filled with valuable and interesting matter. It seems too bad that the need of a journal of this character was not discovered sooner.—*Jamestown Sunday Leader.*

THE PETROLEUM AGE for March comes to us with its rich and varied store of oleaginous knowledge, and is even better, if possible, than either of the preceding numbers. Messrs. McCullagh and Carr, in this complete and comprehensive monthly, furnishes to the public a perfect textbook in matters pertaining to the progress and development of the Petroleum trade. It is a work that should be in the hands of all who are interested in or connected with this great industry of our country.—*Oil City Telegram.*

THE PETROLEUM AGE, issued by the Age Publishing Company, of Bradford, is not only the handsomest of the many publications devoted to special industries, but is one of the most valuable. The Age, editorially, to borrow a political term, is a "Half Breed" among the oil factions. We know of no heartier way to endorse its position, and trust its opinions may continue as sound and its facts as valuable as those contained in the March number, now before us. A file of the Age, with its maps, statistics, and descriptive articles, will make a valuable history of the petroleum business.—*Buffalo Express.*

A RICH deposit of phosphate of lime has been discovered, says the *Journal of the Society of Arts*, about four miles northeast of Apt, in the Department of Vaucluse, France. In the principal layer bones in ill-defined masses are found near together, while they are further apart and better preserved in a stratum of sand immediately below the first deposit. Both over and under the phosphate of lime and sand are strata of green sandstone, above which are different calcareous stratifications mingled with shales, lignites, shells, etc. The bones belong chiefly to the pachydermata, but also to hyenas, crocodiles, birds and a kind of river pig. Specimens have been sent to the Museum of Lyons, Montpellier, Toulon, Marseilles and Munich.

THERE are but very few bears among producers, mostly all of them being interested in better prices. They are at least long of oil to the extent of their own production.

PETROLEUM EXPORTS FROM 1864 TO 1881, INCLUSIVE.

THE quantity of Petroleum and the quantity and value of Petroleum Products exported from the United States, during each of the fiscal years from 1864 to 1881, inclusive, as reported by the Bureau of Statistics, are as follows:

Year ended June 30.	EXPORTS.											
	Mineral, crude (including all natural oils without regard to gravity.)		Mineral, Refined or Manufactured.						Residuum (tar, pitch, and all other from which the light bodies have been distilled).		Total.	
			Naphtha, benzine, gasoline, etc.		Illuminating.		Lubricating (heavy parafine, etc.).					
	Gallons.	Dollars.	Gallons.	Dollars.	Gallons.	Dollars.	Gallons.	Dollars.	Gallons.*a*	Dols.	Gallons.	Dollars.
1864 . .	9980654	3864187	438197	154191	12791518	6764411	. . .	. . .	. . . .	. . .	23210369	10782689
1865 . .	12293896	6868513	480947	173943	12722005	9520957	. . .	. . .	. . . .	. . .	25496848	16563413
1866 . .	16057943	6015921	673417	188825	34255921	18626141	. . .	. . .	. . . .	. . .	50987341	24830887
1867 . .	7344248	1865001	224576	34175	62686687	22509466	. . .	. . .	. . . .	. . .	70255511	24407642
1868 . .	10029659	1564933	1517268	167873	67909961	19977870	. . .	. . .	. . . .	. . .	79456888	21810676
1869 . .	13425566	2994404	2673094	445770	84403492	27636137	*b*134532	51122	. . . .	. . .	100636684	31127433
1870 . .	10403314	2237292	5422604	564864	97902505	29864193	*b*6871	2611	. . . .	. . .	113735294	32668960
1871 . .	9859038	1971847	7209592	746797	132608955	34138736	*b*59632	22660	155474	14770	149892691	36894810
1872 . .	13599768	2307111	8092635	932160	122539575	30566108	541419	211287	438186	41724	145211583	34058390
1873 . .	18439407	3010050	9743593	1487439	158102414	37195735	748699	277966	781074	79566	187815187	42056756
1874 . .	17776419	2099696	9737457	1038622	217220504	37560995	1244305	404244	1827798	142299	247806483	51254815
1875 . .	14718114	1406018	11758940	1141440	191551933	27030361	1173473	313656	2752848	187103	221955308	30078568
1876 . .	20520397	2220268	14780236	1442811	204814673	28755638	963442	303863	2581404	193206	243660152	32519786
1877 . .	26819202	3756729	15140183	1816682	262441844	55401132	1601065	497540	3196620	317355	309198914	61789438
1878 . .	27936727	2694018	16416621	1411812	289214541	41513676	2304624	639381	3968790	316087	339841303	46574974
1879 . .	25874488	1927207	18411044	1192229	367325823	31783575	5162835	1039124	4967000	276490	421741190	36218625
1880 . .	28297997	2180413	15054361	1258780	331586442	35999862	2487681	655468	3307038	210726	380733519	40305249
1881 . .	44690998	. . . .	20342664	. . . .	487322613	. . . .	. . .	. . .	. . . .	. . .	552356275	34343260

As a given number of gallons of refined petroleum represents the product of a larger number of gallons of crude petroleum, it is necessary to reduce the exports of petroleum to their equivalent in crude oil, in order to arrive at a knowledge of the percentage of the total product of mineral oil exported. It has been ascertained as a result of a careful computation, that the quantity of petroleum and its distilled products exported during the year ended June 30, 1878, was equivalent to 407,482,175 gallons of crude oil; or, in other words, that the exports of petroleum constituted about 66 per cent. of the production. A larger percentage of the mineral oil product of the country is exported than of any other product except cotton.

a Barrels reduced to gallons at the rate of 42 gallons to the barrel. *b* Estimated.

MARCH OFFICIAL QUOTATIONS FOR CRUDE.

THE following table shows opening, highest, lowest, and closing quotations at the Oil Exchange each day.

	Opening.	Highest.	Lowest.	Closing.
1	81¾	82	80⅝	81⅛
2	81	82⅛	80¾	81⅞
3	82	82¼	81½	81¾
4	82	82	81¼	81⅝
6	81¼	81¼	80	80⅛
7	80	80¼	79¾	80
8	80	80⅛	79	79
9	79⅛	79⅜	78⅜	78⅝
10	78⅝	79⅜	78⅝	79½
11	79⅞	81½	79⅞	81¼
13	81¼	81¾	80⅞	81½
14	81½	81½	79⅞	79⅞
15	79⅞	80¾	79½	80⅜
16	80⅜	80¾	80¼	80⅝
17	80⅝	80⅝	79⅝	80⅛
18	80	80½	79⅞	80⅛
20	79⅞	79⅞	79½	79¾
21	79⅞	80⅛	79⅞	80
22	79⅞	80⅛	79⅞	80
23	80⅛	81¾	80	81⅝
24	81¾	83⅛	81⅝	82½
25	82¼	82⅜	81¼	82
27	82¼	83	82¼	83
28	83½	84½	83¼	83½
29	83⅜	83½	81⅞	82
30	82⅛	82½	80	80¼
31	80¼	80⅞	80	80

MARCH OFFICIAL QUOTATIONS FOR REFINED.

THIS table gives the daily quotations for refined oil at the principal foreign as well as domestic ports.

	N. Y. cts.	Philadelphia. cts.	Baltimore. cts.	Bremen. m'rk.	London & Liverpool. pence.	Antwerp. fr'c.
1 .	7½	7⅜	7½	7.25	6⅛@6¼	18⅛
2 .	7½	7⅜	7½	7.25	6⅛@6½	18⅛
3 .	7½	7⅜	7½	7.25	6 @6⅛	18
4 .	7½	7⅜	7½	7.25	6 @6⅛	18
6 .	7½	7⅜	7½	7.30	6 @	18⅛
7 .	7½	7⅜	7½	7.25	5⅞@6	18⅛
8 .	7⅜	7⅜	7⅜	7.10	5⅞@	18
9 .	7⅜	7⅜	7⅜	7.05	5¾@	17¾
10 .	7⅜	7⅜	7⅜	7.10	5¾@	17⅞
11 .	7⅜	7⅜	7⅜	7.20	5¾@	18¼
13 .	7½	7⅜	7½	7.25	5¾@6	18
14 .	7½	7⅜	7½	7.20	5⅞@6	17⅞
15 .	7½	7⅜	7½	7.20	5⅝@5¾	17⅞
16 .	7½	7⅜	7½	7.10	5¾@6	18
17 .	7⅜	7¼	7⅜	7.10	5⅝@5⅞	18
18 .	7⅜	7¼	7⅜	7.10	5⅝@5¾	18
20 .	7⅜	7¼	7⅜	7.10	5½@5¾	18
21 .	7⅜	7¼	7⅜	7.15	5⅝@5⅞	18
22 .	7⅜	7¼	7⅜	7.20	5¾@5⅞	18
23 .	7⅜	7¼	7⅜	7.15	5¾@5⅞	18
24 .	7½	7⅜	7½	7.15	5⅝@5⅞	18
25 .	7½	7⅜	7½	7.20	5⅝@5⅞	18
27 .	7⅜	7⅜	7½	7.20	5⅝@5⅞	17⅞
28 .	7⅜	7⅜	7½	7.20	5⅝@5⅞	17⅞
29 .	7⅜	7⅜	7½	7.20	5⅝@5⅞	17⅞
30 .	7⅜	7⅜	7½	7.20	5⅝@5⅞	17⅞
31 .	7⅜	7⅜	7½	7.20	5⅝@5⅞	17⅞

THE PETROLEUM AGE.

DEVOTED TO THE

INTERESTS OF THE PETROLEUM TRADE.

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W. J. McCULLAGH, *Editor.* A. J. CARR, *Business Manager.*

THE Simcox Well at Bald Bridge, Butler County, is a moderate affair. The excitement it caused has nearly subsided.

"THE refined trade of America" opens up a subject for discussion that takes in an immense scope of territory as well as phases.

OIL-Region mud can be had in abundance, and at prices that would astonish customers. The supply, like crude oil, is fully up to the demand.

THE world may sometime run short of water, but oil men calculate to keep it supplied with oil, if their efforts at opening new fields may be taken as an indication.

PIPE-line men are beginning to ask themselves the question, "What is to be done with all the material they have accumulated (which they denominate as junk) when this section follows in the track of all those which have preceded?"

CAPT. Eads' Inter-oceanic Ship Railway is liable some day to become an accomplished fact. In such a case poor old M. De Lesseps would have to abandon the work of drilling out his Panama Ship Canal and tackle drilling for oil at Richburg, or some other interesting locality.

IT is now announced by a correspondent of the AGE that Mr. Chas. Frew, of Pittsburg, was the first producer of petroleum. We hope this correspondent is right, and that this question is forever settled. Mr. Frew is a successful producer and refiner. He must certainly view the past quarter of a century with much interest.

WITH pleasure we note the fact that I. E. Dean is turning his attention to the real estate business in the Allegany field. What Mr. Dean does not know about that field in particular, and the other fields in general, is scarcely worth knowing. His honesty is only excelled by his intelligence and suavity. His prompt, clear-sighted manner fits him admirably for the real estate business, and persons making investments in that field will consult their own interests by consulting Mr. Dean.

THE "oil department" of the municipal government of Philadelphia has had a case of "a committee of investigation" to ascertain the whereabouts of the woodchuck that was furnishing oil at rates below cost of manufacture. Some producers in this country could suggest a clue if they had a chance too, whether they would strike the hole of the rat or not.

OUR correspondent at Petrolia, Ontario, states in this AGE that there is considerable "jerking" done in oil matters in that field. This will doubtless strike the Pennsylvania or New-York operator as something entirely new. What the "jerking" may mean is not understood here, nor does our well-posted correspondent stop to explain. It is possible that it refers to the manner of treating an unfortunate producer after he has obtained, what we call in this country, a duster—he is "jerked" bald-headed.

THERE is a regularly organized force of dealers in refined petroleum throughout the middle Southern States, and extending up into Ohio, for the purpose of contesting the right of Chess, Carley & Co., who are supposed to constitute a branch of the Standard Oil Co., to the exclusive control of the refined trade in that section. It is to be presumed, therefore, that the consumers are enjoying a happy time of it out there just now. Chess, Carley & Co., have maintained a most powerful hold on the trade in the Southwest for two years past, and it now remains to be seen what the fresh contest will result in.

THE American Consul at Caneseus, Geestemunde Bremerhaven, had better post himself in German oil matters next time before he undertakes to act the part of oil reporter. Last fall he startled the American oil trade by the ridiculous announcement that Germany was about to supply its own needs in the uses of petroleum. The 67,000,000 gallon demand of 1881 was to drop, in 1882, to a mere fraction of that amount, if, indeed, the scale would not be turned entirely, and Germany should go into the export business.

What a farce has been played before our eyes by this distinguished representative of "Oil Region Journalism."

JOHN CHINAMAN AS AN OIL MAN.

THE anti-Chinese bill has been before the Chief Magistrate of the nation, and his foot has come down upon it squarely. He seems to have understood the pulse of the people even better than the several hundred representatives who spent weeks in trying to make themselves believe that all men were not created free and equal, even though the constitution created by their forefathers stated so explicitly. Whatever he may be in California or other lands, John Chinaman as a citizen of the Oil Country is a first-class fellow. His rights are considered equal to those of any other citizen, and he seems to have a faculty of appreciation of the fact. He tends strictly to his own business, and only when molested or interfered with in the pursuit of his legitimate calling is he ever known to become troublesome. He possesses also a peculiar faculty for defending himself when attacked by his inferiors, for which the gentleman should have credit. The idea of prohibiting the emigration to America of John and his associates seems too ridiculous to mention. All the arguments yet adduced to show the justice of this attempt have appeared more like the gibberage of babes than the sound logic of statesmen. Here in the Oil Regions a town is not considered complete until John's shingle has been displayed in numerous quarters. He is as indispensable as any other representative of the industries which thrive among us. If we possessed the power to prohibit emigration to America, John would not be the first we should point our finger at.

THE suit instituted by Ex-Auditor Gen. Schell against the Standard Oil Co., for upwards of three million dollars, for taxes, has resulted, as expected, in favor of the defendant. We say in favor of the defendant, for the reason that the judgment awarded is for only about $35,000, an amount agreeing favorably with the opinion of the defendant as to the amount it really owed.

OUR Washington Legislators are struggling with a new bankruptcy bill. A skeleton has been in and out of committee, but it makes slow progress. It should be hurried up. A man in Bolivar the other day declared that he sat up nights to watch for the earliest news from this much-needed law. He thinks he could make a strike equal to a 10-barrel gusher on 53, Alma, in ten days after the President signed such a document. Congress should heed this announcement. If oil continues on the down grade much longer, there will probably be more than the Bolivar man who would be relieved of a big burden with facilities at hand such as the law prescribed would offer.

SUBSCRIBERS to the AGE, in any part of the country, may consider themselves in correspondence with the AGE, and inquiry regarding any event in the region of supply or elsewhere will be properly and speedily answered. The AGE has its spies in every corner of the oil universe, and is always posted in relation to the latest doings.

IT is two months since the AGE, on authority that seemed unquestioned, announced a dry hole at Mahoopany, Pa. Since that time all kinds of rumors have floated around regarding the striking of a rich deposit there. The very latest, however, confirms the statement of two months ago that there is nothing in it.

JUDGING from the tone of the real estate market, money must be loosening up somewhere. Whenever a favorable opportunity offers there seems to be a sufficient amount to supply all the requirements of *trade*. This speaks encouragingly of business in the Oil Regions, even at less than 80 cent oil.

THE SITUATION AND ITS MARCH CHANGES.

IN our March number we published our table giving the production of the different oil fields, together with consumption figures from 1859 to 1882. This table is a valuable one, and we feel that our readers will be pleased to see it re-produced in a shape more easily read. Also, with it the acreage of the different fields.

The consumption of 67,000 bbls. daily figured in our review of the situation in last number, together with the estimated shrinkage on stocks of 3,000 bbls. daily, making total of 70,000 bbls. daily consumption, has been commented upon largely during the past month, and each day brings new evidence that these figures are sufficiently low in the estimation of the best posted in the stocks and requirements of the trade. Our estimate that on June 1st our consumption would equal the production, requiring a decline in the latter of 3,410 bbls. for April and May, does not need amendment just yet. The shrinkage in production is increasing in many localities in the Bradford field. It is therefore reasonable

that the decline in this field will be much in excess of the amount necessary. As to the Allegany and Warren fields, which are elsewhere treated, after perusing the facts in relation to them, we are satisfied that the new developments in both counties will fail to sustain the total yield much beyond July 1st, if, indeed, they succeed even to that date. Of course, the developments of the Clarendon field are extended something over three miles to the southwest by the striking of the notorious "646." The latter well, otherwise known as the Jamestown Well, appears no greater than some other Clarendon wells, and would appear to be very similar in character as to quality and depth of sand rock. Some of the intervening territory may be found to be rather light, as the Crowel & Roth Well on lot 560, about midway from Clarendon, would indicate. The "646" may develop a "pot" of its own; but whatever it may do it does not upset the calculations of those who have carefully viewed the situation for months past. It has now been nearly two years since that field was discovered, which was followed a year later by the Green & Darling pool in the Blue Jay section, and nine months since the Magee & Horton Well, at Sheffield, was opened up, and the entire production of this portion of Warren County does not yet exceed 2,000 barrels per day. Admitting that when the operators move from Allegany for new fields to conquer—which they must do at an early date—the Warren County fields will receive attention, yet it must be taken into consideration that firms that started three, five or ten wells at a time in Allegany will be obliged to move much slower in the lower and more treacherous country. It is very liberal to allow that Warren County developments will no more than sustain the decline in Allegany during 1882, and that the changes wrought in March do not change the conclusion drawn a month since, that the stock will be largely drawn upon during the latter part of the year.

THE REAL ESTATE MARKET.

THE comparative quiet that prevailed during the first two months of the year in real estate transactions was effectually extinguished in March. In the Allegany field especially there was quite a boom in this branch of the business. The undrilled territory has been especially sought after by purchasers, and owners of this kind of property have had a picnic, so to speak. During the greater part of the month the opinion had prevailed that new territory was destined to become very scarce, and for this reason many operators who had decided to do but little drilling in the immediate future entered the arena and made additional purchases. The ruling prices for net production have been about $200 a barrel for territory thoroughly drilled, while that only partially punctured commanded from $300 to $400 a barrel. Mr. T. B. Hoover, of the Petroleum Real Estate Co., furnishes the following schedule of transactions:

Bradford sales, reported and private, number thirteen, five under $7,000, two $10,000 to $12,000, two $20,000 to $25,000, two $32,000 to $40,000, one $50,000, and one $90,000; total $296,200, an increase over last month of $112,925. Allegany reported and private sales number twenty-eight, ten under $5,000, five $5,000 to $10,000, seven $10,000 to $20,000, one $25,000, one $36,000, two $40,000, one $60,000, and one $104,000; total $453,436. Warren reports three sales; total $18,500. This makes a grand total of sales for March of $768,136.

To this may be added smaller transactions, which do not come under the notice of dealers, sufficient to swell the aggregate to over $800,000. In Allegany there is a general disposition to trade on easy terms to the purchaser, ⅓ cash in hand being as a rule the highest asked. In Bradford even less is required down, and in a few instances trades have been made without the payment of a ten dollar bill, the purchaser being only required to furnish a certain amount of oil at stated times until the contract has been fulfilled. In Warren County the matter is different. The lands are nearly all owned by large corporations, who demand cash in hand for all they sell. This, of course, restricts the number of sales considerably. Since the striking of the new well on lot 646, $100,000 has been deposited in the section. Notwithstanding the decline in the price of oil, there seems to exist a feeling that oil property is cheap at current rates, and more money is afloat by a long distance than was one month ago.

NEW TANKAGE.

THE United Pipe Lines furnish the following table of iron tankage erected during March:

Locality.	No.	Owner.	Capacity.
Olean,	4	United,	139,450
Colgrove,	2	"	73,500
Rock City	2	Buffalo & Rock City,	52,300
Richburg	1	Miner, William & Pitts,	36,900
Bolivar,	1	McCalmont Oil Co.,	35,450
Bolivar,	1	A. J. Thompson,	35,900
Total,	11	Total,	373,500

REPORT
OF
OIL OPERATIONS FOR MARCH.

WELLS COMPLETED.

TUNA VALLEY.

Lot.	Operator.	Production.
Leonard, Leonard and others		7
Scott, Abbott & McGinnus		15
Evans, Henderson & Bowman		12
Lee, Rogerson & Co		12
Breneman, McMurry & Co		dry

EAST BRANCH.

Drake, Fulton & Watson, No. 2		8
" Risher & Zeigler, No. 2		10
" J. S. Book & Co., No. 22		8
" Fuller & Co., No. 8		10
Deiter, Emery Oil Co., No. 14		10
" " " 15		10
Morris, " " 32		8
" " " 33		10
" " " 34		10
Fuller, American Oil Co		10
" "		10
Degolia, Quintuple Oil Co., No. 11		10

WEST BRANCH

Gas Hollow, A. F. Heald, No. 7	6
Wagner, Emery & Bradley	8
Kissam, Chapin & Co., No. 7	5
Wells	20
Production	175
Average about	8.13

QUINTUPLE TRACT.

Lot 40, J. S. Wilson, No. 2	10
49, Applebee & Bro., No. 2	10
52, J. C. Wales, No. 3	15
72, E. K West, No. 3	12
103, George Woodard	12
111, Gardner & Hessley	10
120, Venture Oil Co., No. 1	15
193, M. J. Seymour	12
213, Kane City Oil Co	10
223, Petrolia Oil Co	10
225, Vere & Forner	10
253, Clark & Foster, No. 2	10
258, Burrows & Co., No 4	10
261, Brown & Watson, No. 6	12
264, Matthews, Boggs & Curtis, No. 5	10
271, Eaton & Bunday, No. 3	10
276, Cowley & Co	10
Wells	17
Production	188
Average about	11

KENDALL CREEK.

Moore, Huff & Ege	18
Moore, Gillespie Bros.	15
Corwin, Pack & Freeman	dry
Turner, Perry & Timblin	15
Storms, Wright & Sowers	15
Buchanan, Anchor Pet.	15

FOSTER BROOK.

Clark, W. N Hanna	5
Borden, Howe Bros	10
Ent Transit Co., F. W. Mitchell, No. 1	10
C. B. & H. Tract, Treat & Porterfield, No. 3	8
" " " " " " 4	10
" " Argue Bros., & Co. No. 15	18

SUMMIT, MARION & RIXFORD.

Book, Hazelwood Oil Co., No. 35	20
" " " " 36	18
" " " " 37	16
Chambers, " " " 26	12
Borden, Urquhart, Wallace & Lavens	15
" Shear Bros. & Brunchweiger, No. 12	15
Smith, Knox Bros.	15
Patterson, R Gregg	25
Cornen, C. A. & D. Cornen, No. 16	22
Wells	21
Production	297
Average	14.7

STATE LINE.

Angell, Hogan & Murphy	15
Barse, Downing	10

FOUR MILE.

Van Campen, Quintett Oil Co	20
" Rockaway	18
Shattuck, Curtis & McCormick, No. 6	15
Howard, Evans	12
" "	15
Chamberlin, Chamberlin	15

INDIAN CREEK.

Hamlin, Forest Oil Co., No. 32	10
Loup, Globe Oil Co.	10
Keating, Forest Oil Co	15
Loup, Peck & Freeman, No. 27	10
Loup, Downing	10
Loup, Stevenson	10
Campbell, Follett Bros	12
Palmeter, Purtell Bros., No. 12	12
Loup, O'Neil, No. 9	10
Indian Creek, Unknown 2	20

MEEK'S CREEK.

Merceraux, J. L. McKinney & Co.	5
Wells	20
Production	244
Average about	12

BIG SHANTY.

Dent Lands, P. C. L. & P. Co., No. 23	20
" " " 24	20
" Dent Oil Co., No. 7	30
" " " " 14	30
" " " " 15	55
Bingham Lands, Lot 169, Dent Oil Co. No. 17	25
" 176, Fertig & Henne No. 6	20
" 180, Hamlin & Rose No. 2	20
Hamlin, Minard Run Oil Co., No. 12	15
" " " 13	15
Lot 91, Union Oil Co., No. 16	20
Tunungwant lands, Book & Eliottest	15
Taylor, Tim Mullen, Jr.	20
Sullivan, Mills & Mullen, No. 6	20
Hamlin, Union Oil Co., No. 9 est	10
Stettheimer, Hill & Co	10

KINZUA.

Bingham, Union Oil Co. No. 32	40
" J. M. & Thos. Tait	5
" Parker, Cornwall & Hasson,	15
English, Dew Drop Oil Co.	dry

MISCELLANEOUS.

Benezeret, Foster & Whipple	dry

COLE CREEK.

Bingham, G. & Van V. pur., Union Oil Co. No. 18.	40
Bingham, G. & Van V. pur., Union Oil Co. No. 24.	6
" Lot 405, Forest Oil Co. No. 6	15
" 453-4, Bayne, Fuller & Co. No. 43	20
" " " 44	20
" 468-9, Cumulative Oil Co. No. 5	15
" 491, Forman & Union Oil Co. No. 8	20
" 491, " " " 12	15
" 492, Johnson & U. Oil Co. No. 32b	20
" 492, " " " 35b	25
" 493, " " " 29b	20
" 469, J. L. McKinney & Co. No. 8	20
" 572, Geo. V. Forman No. 10	20
" 534, " " 10	15
" 534, " " 1	20
" 573, " " 15	20
" 573, " " 17	25
Moody, Minard Run Oil Co. No. 79	30
" " " 80	30
" " " 82	20
Bingham, Nina Oil Co.	15
" Trio Oil Co.	15
Wells	43
Production	851
Average	11¾

ALLEGANY FIELD.

SCIO.

Lot 2, Hardison & Morse	8
Wells	1
Production	8

ALMA.

Lot 1, Phillips Bros	12
5, Noble Arnold & Co	15
5, O. P. Taylor	10
17, W. T. Lewis, No. 3	12
18, Anderson, Otis & Co., No. 18	15
" " 20	12
" " 21	15
18, Breckenridge & Harper	15
39, William Chambers	20
39-40, Duke, Norton & Raydure	10
40, O'Donnell & Co.	12
40, Morse & Williams	10
121, Hefferman, McDonald & Geary, No. 6	10
144, Chandler & Grennell, No. 3	12
Wells	14
Production	180
Average	12 6-7

WIRT.

Lot 17, Option Oil Co.	10
17, Anderson & Gamble	15
17, Fox & Barber	15
17, "	20
17, Leonard, Black & Co., No. 3	20
25, Manhattan Oil Co., No. 2	20
25, Kansas Oil Co., No. 14	30
Lot 25, Kansas Oil Co., No. 16	30
25, P. M. Shannon & Co., No. 5	45
25, " " 6	35
25, " " 7	35
25, Fertig Bros., No. 5	25
25, " " 6	25
25 " " 7	25
25, Burleson Farm Oil Co., No. 14	25
25, " " 15	25
25, " " 16	30
25, " " 17	20
25, " " 18	20
33, Luce & Gable	20
33, Wellman, Miner & Pitts	15
33, "	20
33, Knox Bros., No. 7	8
33, Knox & Johnson	dry
33, Patty & Bliss, No. 7	20
33, Murdock & Co	20
33, Alfred Oil Co	15
41, Finnegan, Nelson & Wall	15
41, Cotterell & Co	15
41, H. B. Davis & Co., No. 6	15
41, D. D Flannigan & Co	25
41, Bliss & King	20
41, James & Scott	15
41, Evans & Griffin	20
49, Huff, Ege & Anderson, No. 8	30
49, " " 9	20
49, A. C. Smith & Saulsbury, No. 3	30
49, A. & H. Painter	25
49, Finnegan & Co	30
57, Lynch & Snyder, No. 3	25
57, C. W. Coleman & Co., No. 4	20
57, Lupher Bros., No. 4	40
Wells	42
Production	933
Average	22.5

BOLIVAR.

Lot 5, S. E. Karns & Co., No. 3, est.	15
16, Empire Gas Co	5
24, Mooney & Galey, No. 6	20
24, " " 7	15
24, Milligan Bros	20
36, Shreeves, Lowry & Co., No. 2	15
32, Black & George, No. 8	25
32, Thomas Hackett, No. 6	40
32, " " 8	40
32, Forman & Ballard	40
32, Hazelwood Oil Co., No. 15	30
32, " " 16	40
32, Bradley & Green, No. 7	30
32, Brown & Reid, " 4	30
32, William Sawyer, " 4	40
32, Short & Son, " 2	40
32, John Cochran, " 7	40
38, Fisher Bros	30
39, A. A. Richardson, No 2	50
39, " " 3	50
39, George V. Forman	30
39, "	30
39, Gillespie & O'Donnell	20
39, Whitney & Good	20
39, Weiser & Kincaid, No. 2	30
39, " " 3	20
39, " " 4	30
39, J. H. O'Neil & Co. " 8	35
39, C.H.Emerson & Co. " 3	30
39, " " 4	30
39, H P. Malone & Co. " 4	20
39, " " 5	30
39, " " 6	20
39, Capt. Stevens & Co., No. 6	20
39, Smith & Wellman	30
40, Meldrum Oil Co., No. 9	35
40, " " 10	35
40, B. F. Palmer, No. 6	30
40, " " 7	20
40, " " 8	30
10, " " 9	25
40, Forgie Bros., No. 4	30
40, Anderson & Humphrey, No. 3	20
40, " " 4	30
40, McCalmont Oil Co	30
40, "	30
40, "	30
40, "	30
40, "	25
40, "	20
40, "	30
40, "	25
47, J. Varney, No. 7	25
47, " " 9	20
47, Clarion Oil Co., No. 16	30
47, Manhattan Oil Co., No. 3	10
47, A. J. Thompson, No. 1	25
47, Heferman & Hanley	15
47, Brawley Bros. No. 5	20
47, " " 6	20
47, Moriarty & Co. No. 4	25
47, " " 5	20
47, Lafayette Oil Co. No. 4	25
47, " " 5	20
47, " " 6	25
47, " " 7	25
48, Manning & Co., No. 2	30
48, Smith & Zeigler, No. 6	40
48, " " 7	50
48, McCalmont Oil Co	25
48, "	60

Lot 48, A. W. Nelson & Co., No. 4 50
48, " " 5 30
40, Larry Blackhall 30
48, F. W. & A. B. Weiser, No. 5 30
48, Tidd & Newbury, No. 5 25
48, Steele & Plummer, No. 2 70
48, C. J. Ashner & Co 25
48, Richardson & Co., No. 3 30
48, " " 4 30
55, A. J. Thompson, No. 1 25
44, McCracken Bros., & Elison, No. 4 . 20
48, " " 5 . 20
55, Kneeland & Connelly 22
55, Stock & Keeler, No. 3 20
55, Smith & McCracken, No. 5 30
55, " " 6 25
55, " " 7 20
55, " " 8 25
55, " " 9 30
55, " " 10 25
55, Kinkaid & Morton 8
55, Stratton & Wilson 12
55, Campbell & Wood 5
55, J. C. Lineman 25
55, Varney & Co 5
56, Showalter Bros. & Co., No. 6 80
56, " " 7 80
56, Anderson & Humphrey, No. 4 . . . 65
56, " " 5 . . . 85
56, I. L. & W. P. Haldeman 35
56, " 40
56, Hamlin, Rose & Markham, No. 5 . . 70
56 " " 6 . . 90
56, McCalmont Oil Co 35
56, " 35
56, " 30
56, " 40
56, " 30
56, " 35
63, J. T. Cooper & Co 25
63, J. T. Cooper & Co 25
63, Wellington Smith, No. 5 20
64, Dyer & Whitwell, No. 4 35
64, Hoover & Thompson, No. 6 30
64, " " 8 40
64, " " 9 30
64, Armor & White, No. 12 30
64, Anderson, Greenlee & Alshouse . . . 40
65, H. & W. A. Hardison, No. 4 30
64, Forman & Ballard, No. 6 35
64, " " 7 30
64, John Cornwall, No. 3 30
64, Kerwin & Reid, No. 3 30
64, " " 4 40
64, Russell & Greenlee, No. 3 40

Wells 126
Production 3882
Average 306.7

CLARKSVILLE.

Lot 17, Capt. Britt 10
17, Gates 15
18, Huston & McElroy 15

Wells 3
Production 40
Average 13

GENESEE.

Lot 6, Sage & Streeter 5
7, A. P. & W. R. Tanner, No. 3 . . . 10
7, Genesee Oil Co. No. 2 10
8, J. O. Johnson & Jones No. 4 . . . 25
8, Hays, Knox & Co. No. 4 30
8, " 6 20
8, Merrill, Perrin & Co 20
8, " 15
8, Bussell & Urquhart 30
8, J. C. Smith & Son No. 4 20
8, H. J. Morton & Co. No. 14 30
8, " " 18 30
8, " " 19 20
8, F. E. Boden & Co. No. 17 35
8, " " 18 35
8, " " 19 20
14, Weiser & Dodge . . . . . dry
16, Taylor, Hill & Smith 15
16, Jones Bros. No. 3 20
16, " No. 4 15
16, G. S. Bussell 15
16, Carlin Bros. & Co 15
16, Wheeler & Gailey Bros. No. 6 . . . 15
16, A. P. Tanner No. 4 20
16, D. W. Canfield 15
16, Daggett Farm Oil Co 15
16, " " . . . 15
16, " " . . . 20
23, Coss Bros., est 5
30, Duor & Roach 20

Wells 30
Production 560
Average 18 2-3

SUMMARY.

Wells Completed, March 31, 1882.

	Wells.	*Production.*	*Dry.*
Scio	1	8	.
Alma	14	180	.
Wirt	42	933	1
Bolivar	126	3,882	.
Clarksville	3	40	.
Genesee	30	560	1
Total	216	5,603	2

WARREN DISTRICT.

CLARENDON.

Lot 78, Beatty, No. 16 12
80, May & Groves 10
80, Windsor Bros., No. 7 18
105, Short, Oyster & Co., No. 5 10
106, Conrath Bros 10
106, Archbold & McClure, No. 5. 15
107, F. B. Malone, No. 3 15
107, Lowery 8
161, Meeley Bros 7
468, E. N. Smith & Co., No. 2. 20
498, Swamp Angel Oil Co., No. 1 10
498, W. Hopewell, No. 2 10
498, " " 3 15
498, Waters & Co 15
498, F Pratt & Co 20
498, Conway & Gandy 10
498, Stoughton 10
498, Geo. Given, No. 1 20
498, L. H. Estep, No. 2 15
527, Rockwell & Co 10
528, Nickle, Munn & Co. 15
528, George Marsh & Co., est 20
328, R. G. Cochran, No. 2 15
528, Armstrong & Speer, No. 5. 15
528, " " 6. 10
528, W. B. Ash, No. 2 15
529, Sconblom & Co. 10
556, Conrath & Wright 10

GLADE.

Matson, Brown Bros. 20
Jackney, Johnson & Co . . . . . dry
Kerberger, Sargent & Co 3

SHEFFIELD.

Lot 397, Clark & Armor, No. 4 10
407, Stewart & Co 2
408, Wetmore & Co., No. 6 30
408, Magee & Horton, No. 7 20
646, Grace & Co 20
Rockwell, Townsend & Waugh 8

Wells 37
Production 483

Average 13

THE LOWER FIELD.

CLARION.

Richey Run tract, Moore & Co. 4
J. Black, Irwin & Co. 9

BYROM CENTER.

Middleton, Martin & Co. 7
D. M. Crawford, Porter & Phillips 4
" Bissell & Steelsmith 12
A. Anderson, Duncan, Dodd, Newton & Co. 18
E. Robinson, E. Robinson & Co . . . . . dry

VENANGO.

Furnace tract, Fisher Bros 8
Branon, Wolf & Kugler, est. 5
Kauffman, A. Dale 5
McBride, W. Chambers 5
Beichtel, Unknown. 5

BUTLER AND ARMSTRONG.

Bell, A. Shidemantle 3
Eichenlab, Phillips Bros 3
B. B. I. Co., Hunter & Co 10

Wells 15
Production 98

Average 6½

WELLS DRILLING.

ALLEGANY FIELD.

SCIO.

Lot. *Operator.* *Depth.*

Lot 1, Davidson . . . . . rig
2, Nameless Oil Co., No. 2 . . . . . sand
2, " " 3 . . . . . rig bldg
2, " " 4 . . . . . rig bldg
2, Taylor & Allen . . . . . sand
2, Hardison & Moore 300
2, " 400
2, " . . . . . rig bldg
2, Stewart & Co . . . . . drilling
Wellsville, Empire Gas Co . . . . . rig bldg

Drilling 5
Rigs 5

Total 10

ALMA.

Lot 1, Empire Gas Co. (shut down) 400
1, Webster & Son . . . . . drilling
1, Phillips Bros . . . . . rig bldg
4, Scott, Elliott & Co 400
5, Noble, Arnold & Co . . . . . rig bldg
5, O. P. Taylor . . . . . rig bldg
17, Belamy & Taylor 1000
17, " . . . . . rig
17, " . . . . . rig bldg
17, W. T. Lewis . . . . . rig bldg
17, Gaskell & Workman, No. 3 100
17, O. P. Taylor & Co., No. 10 . . . . . sand
17, " " 12 1000
17, " " 13 . . . . . rig
18, Anderson, Otis & Co., No. 16 300
18, " " 19 800
18, " " 22 1000
18, " " 23 1000
18, " . . . . 2 rigs bldg
18, G. M. Barney . . . . . rig bldg
23, Dow & Browning 1200
38, Snow & Co 900
38, William Chambers . . . . . rig
38, Dewees & Weaver, No. 3 600
39-40, Duke Norton & Raydure, No. 15 . 800
39-40, " " 16 . 700
39-40, " " 17 . 500
39-40, " 4 rigs
39-40, " rig bldg
39, Cole & Blackmar . . . . . sand
40, Morse & Williams, No. 6 400
40, " " 7 . . . . . sand
68, Elliott & Torrey . . . . . rig
94, Weaver Bros. & McCalmont 600
121, Hefferman, McDonald & Geary, No. 7. rig
143, Pennell Bros 1000
143, Elliott & Doty . . . . . rig
143, Ira W. Shirley . . . . . rig
144, Bunker & Fitzsimmons . . . . . sand
144, " . . . . . rig bldg
144, Chandler & Grinnell, No. 4 . . . . . rig
144, William Chambers . . . . . sand

Drilling 24
Rigs 22

Total 46

WIRT.

Lot 17, Koch Bros., No. 3 400
17, Taylor & Humphrey, No. 4 (shut down 300
17, Option Oil Co., No. 2 400
17, Leonard, Blair & Co., No. 4 450
25, Harry White, No. 3 . . . . . rig
25, Manhattan Oil Co., No. 3 700
25, Allen & Taylor, No. 7, fishing 150
25, Fertig Bros., No. 8 200
25, Fertig & Co. . . . . rig
25, Burlison Farm Oil Co., No. 19 700
25, " " 20 400
25, " " 21 500
25, " " 22 . . . . rig
25, " " 23 . . . rig bldg
25, Lem Whitney, No. 3 900
25, " " 4 . . . . . rig bldg
25, Coast & Son . . . . . rig
25, Homestead Oil Oil Co., No. 2 300
25, Homestead Oil Co., No. 3 . . . . rig bldg
33, Patty & Bliss, No. 8. . . . . drill
33, " " 9. . . . . rig
33, Knox Bros . . . . . rig
34, O. P. Taylor. . . . . rig bldg
41, Finnegan, Nelson & Wall, No. 2. . . . rig
41, " " 3 . rig bldg
41, Thomas Painter 200
41, James Scott. . . . . rig
41, Welman, Miner & Pitts 500
41, " . . . . . 2 rigs
41, H. P. Davis & Co., No. 7 . . . . . rig
41, Evans & Griffin.. . . . . rig
41, D. D. Flannigan & Co 300
41, Mattock & Taylor. . . . . rig
49, Huff, Ege & Anderson, No. 10 400
49, Richardson, No. 5 600
49, " . . . . . rig
49, " 300
49, E. & H. Painter, No. 2 500
49, " " 3 . . . . . rig
49, N. T. Saunders " 5 . . . . . sand
49, " " 6 . . . . . rig bldg
49, Gilligan & Ward . . . . . rig bldg
49, Finnegan & Co., No. 6 600
49, " " 3 700
57, Lynch & Snyder, No. 4 . . . . . rig
57, Lupher Bros., No. 5 600
57, " " 6 100
57, " " 7 . . . . . rig bldg
57, Thompson & Loan, No. 11 760
57, Ford, Ellis & Co., No. 1 . . . . . sand
57, (Nile) Davidson & Co . . . . . rig

Drilling 27
Rigs 24

Total 51

BOLIVAR.

Lot 2, Scott & Elliott 100
6, Williams & Wolf, No. 3 . . . . . rig
6, " " 4 . . . . . rig
6, Pentzer & Love 600
6, " . . . . . rig bldg
6, Williams & Brown . . . . . drilling
6, Warner & Collins, No. 2 . . . . . rig

Lot 8, S. D. Chase & Co 250
8, " No. 2 . . . . . rig bldg
8, Wm. Reader . . . . . rig bldg
8, A A. Hopkins, No. 2 1000
8, " " 3 . . . . . rig bldg
8, Chubbard & Drake . . . . . rig
8, Carroll Bros . . . . . rig
14, John Cochran 1100
16, Weiser & Kinkard . . . . . rig
16, Empire Gas Co . . . . . rig
16, Peck & Freeman . . . . . 2 rigs
23, Johnson & Conroy . . . . . rig
24, Empire Gas Co . . . . . 2 rigs
24, Johnson & Bartlett, No. 3 . . . . rig
24, Duncan, Carnevon, No. 2 . . . . . sand
24, " 700
24, Milligan Bros 800
24, Boulton Bros 400
24, Reader & Sparger . . . . . rig bldg
30, H. J. Morton & Co 600
30, H. J. Morton & Co 600
31, Shreves, Lowry & Co . . . . . 2 rigs
31, Fisher Bros., No. 3 400
31, " . . . . . rig bldg
32, Black & George, No. 9 600
32, " " 10 400
32, Thomas Hackett, No. 7 800
32, " " 9 600
32, " " 10 . . . . . rig
32, " " 11 . . . . . rig bldg
22, Hazlewood Oil Co., No. 16 250
32, " " 17 . . . . . rig
32, Empire Gas Co . . . . . 2 rigs
32, Brown & Reed, No. 5 . . . . . rig
32, " " 6 . . . . . rig
32, Smith & Co . . . . . sand
32, William Sawyer, No. 5 . . . . . sand
32, " " 6 200
32, " " 7 . . . . . rig bldg
32, Short & Son, No. 3 200
32, " " 4 300
32, " " 5 . . . . . rig
32, " " 6 . . . . . rig
32, Manning & Co . . . . . rig
37, Baum & Bryan . . . . . sand
38, John Cochran 400
38, " . . . . . rig
38, Bowers & Pratt 300
38, Geary, Hanley & O'Shay . . . . 2 rigs bldg
38, Eaton & Elliott . . . . . 2 rigs
38, Frank Clemenger . . . . . rig
38, Gorman & Watson 300
38, Nicholson & Judd 500
38, " . . . . . rig
38, Whitman & Davis 400
38, Wm Curtis & Co . . . . . rig
38, Forman & Ballard 400
38, " 300
38, " 400
38, " . . . . . 2 rigs bldg
38, Franshot & Merrill, No. 1 500
38, " " 2 400
38, " " 3 500
38, " " 4 300
38, Dyer & Carroll, No. 2 500
35, Nutting & Springer . . . . . rig bldg
39, Wiser & Kinkaid, No. 5 350
39, " " 6 200
39, " " 7 550
39, " " 8 300
39, " " 9 500
39, " " 10 300
39, " " 11 . . . . . rig
39, " " 12 . . . . . rig
39, " " 13 . . . . . rig bldg
39, Jack McVay 200
39, C. C. Conroy, No. 1 600
39, " " 2 . . . . . rig
39, " " 3 . . . . . rig bldg
39, Barton & Warner . . . . . rig
39, Gillespie & O'Donnell, No. 3 600
39, Whitney & Good, No. 3 400
39, " " 5 500
39, " " 6 . . . . . rig
39, J. H. O'Neil & Co., No. 6 . . . . . rig
39, C. H. Emerson & Co., No. 4 900
39, " " 6 200
39, " " 5 . . . . . rig
39, " " 7 . . . . . rig bldg
39, H. P. Malone & Co., No. 7 800
39, " " 8 300
39, " " 9 200
39, " " 10 . . . . . rig
39, " " 11 . . . . . rig bldg
39, Capt. Stevens, No. 6 200
39, " " 5 . . . . . rig bldg
39, Smith & Wellman . . . . . drilling
39, " . . . . . rig
39, " . . . . . rig bldg
40, Meldrum Farm Oil Co., No. 11 . . . 600
40, " " 12 . . . 400
40, " " 13 . . . rig
40, B. F. Palmer, No. 10 200
40, " " 11 100
40, " " 12 200
40, " " 13 . . . . . rig
40, " " 14 . . . . . rig
40, " " 15 . . . . . rig bldg
40, W. H. Palmer, No. 1 1200
40, " " 2 200
40, " " 3 . . . . . rig
40, " " 4 . . . . . rig
40, Forgie Bros., No. 5 . . . . . rig
40, " " 7 700

Lot 40, Anderson & Humphrey, No. 5 500
40, " " 6 . . . . rig
40, McCalmont Oil Co 400
40, " 100
40, " 100
40, " . . . . . 3 rigs
40, Smith & Zeigler, No. 8 400
40, " " 9 500
40, " " 10 . . . . . rig
40, " " 11 . . . . . rig
44, Mead Farm . . . . . rig
47, J. Varney, No. 8 600
47, Clarion Oil Co., No. 7 . . . . . rig
47, " " 8 . . . . . rig
47, " " 9 . . . . . rig bldg
47, " " 10 . . . . . rig bldg
47, " " 11 . . . . . rig
47, " " 12 . . . . . rig bldg
47, " " 13 . . . . . rig
47, " " 14 . . . . . rig
47, " " 15 600
47, A. J. Thompson, No. 2 500
47, " " 3 600
47, " " 4 800
47, " " 5 600
47, " " 6 500
47, " " 7 800
47, " " 8 . . . . . rig
47, " " 9 . . . . . rig
47, " " 10 . . . . . rig bldg
47, " " 11 . . . . . rig bldg
47, " " 12 . . . . . rig bldg
47, Hefferman & Hanley, No. 5 600
47, " " 6 1000
47, " " 7 1000
47, Heydrick & Co 300
47, " . . . . . rig bldg
47, Barton & Warner . . . . . rig
47, Brawley Bros., No. 7 200
47, Knox & Canfield, No. 1 400
47, " " 2 . . . . . rig
47, " " 3 . . . . . rig bldg
48, Manning & Co , No. 3 . . . . . sand
48, " . . . . . 2 rigs
48, Scott Mills 250
48, McCalmont Oil Co 500
48, " . . . . . rig
48, " . . . . . rig
48, A. W. Nelson & Co., No. 6 700
48, " " 7 200
48, " " 8 . . . . . rig
48, " " 9 . . . . . rig
48, D. C. Brawley 300
48, " . . . . . rig
48, Bronson, Kiley & Co., No. 6, fishing, 800
48, " " 7 . . rig bldg
48, Steel & Plummer, No. 3 300
48, " " 4 . . . . rig bldg
48, Richardson Oil Co., No. 6 450
50, Workman, Gaskill & Scoville . . . . rig
55, Whitney & Good 1000
55, Gaskill & Gillespie 300
50, A. J Thompson, No. 2, rig burned . 250
50, " " 3 . . . . . rig
50, " " 4 . . . . . rig bldg
50, McCracken Bros., & Ellison, No. 6 . 600
50, " " 2 rigs
55, Kneeland & Connelly, No. 2 450
55, " " 3 . . rig bldg
55, Stock & Keeler, No. 4 300
55, Smith & McCracken, No. 6 600
55, " . . . . 2 rigs
55, Rowley Bros . . . . . sand
55, " . . . . . rig
55, J. C. Lineman . . . . . 2 rigs
55, Stewart & McDonald . . . . . rig
56, Showwalter Bros., & Co., No. 8 . . 300
56, " " 9 . . rig
56, " " 10 . . rig
56, " " 11.rig bldg
56, " " 12 . . 200
56, I L & W. P. Haldeman, No. 6 . . . 500
56, " " 7 . . . 300
56, " . . . . 2 rigs
56, " . . . . 2 rigs bldg
56, Hays, Book & Gartland, No. 12 . . . 350
56, Hamlin & Rose, No. 7 850
56, " " 8 400
56, " " 9 250
56, " " 10 . . . . . rig
56, " " 11 . . . . . rig bldg
56, McCalmont Oil Co . . . . 7 wells drilling
56, " . . . . . 6 rigs
56, I. E. Dean 400
62, Book & Rhodes . . . . . rig
63, Cooper & Co . . . . . sand
63, " . . . . . rig
64, Hoover & Thompson, No. 7 300
64, " " 10 500
64, " " 11 800
64, " " 12 . . . . . rig
64, " " 13 . . . . . rig
64, " " 14 . . . . . rig
64, " " 15 . . rig bldg
64, Armor & White, No. 13 400
64, " " 14 500
64, H. & W. A. Hardison . . . . . rig bldg
64, John Cornwall, No. 4 600
64, Reid & Kerwin, No. 5 . . . . . sand
64, " " 6 1000

Drill 125
Rigs 132
Total 247

CLARKSVILLE.

Lot 1, Knox Bros., No. 2 . . . . . rig
9, Humphrey, Pierce & Mills . . . . . rig
9, Empire Gas Co . . . . . 2 rigs
17, Captain Brett, No. 2 600
17, " " 3 200
17, " " 4 . . . . . rig bldg
17, Geo, Houston & McEelroy . . . rig bldg

GENESEF

Lot 7, J. G. Haymaker 200
7, H. & W. Weiser 1000
7, " . . . . . rig bldg
7, I. E. Dean 1200
7, " 500
7, " . . . . . rig
7, Unknown . . . . . rig
8, Hays, Knox & Co., No. 7 300
8, " " 3, rig burned, 1100
8, Merrill Perrin & Co 400
8, " . . . . . 2 rigs
8, J. C. Smith & Son, No. 6 . . . . . sand
8, " " 7 . . . . rig bldg
8, Reid & Kerwin . . . . . 2 rigs
8, H. J. Morton & Co., No. 16 100
8, " " 17 400
8, F. E. Boden & Co., " 20 . . . . . sand
8, " " 21 1200
8, " " 22 800
8, " " 23 600
8, " " 24 300
8, " . . . . . 5 rigs
8, " . . . . . 3 rigs bldg
8, St. Joe Oil Co., fishing 1100
8, " . . . . . rig
14, Reid & Kerwin, fishing 200
16, Wilson Bros 400
16, " . . . . . rig bldg
16, Taylor, Hill & Smith . . . . . rig
16, " " . . . . . rig bldg
16, Unknown . . . . . rig
16, St. Clair 700
16, Morrison & Bennett 1000
16, " . . . . . rig bldg
16, G. S. Bussel . . . . . rig
16, Carlin Bros. & Co., No. 3 . . . . . rig
16, Wheeler & Galey Bros., No. 7 . . . 200
16, A P. Tanner . . . . . 2 rigs
16, Vandergrift & Miller, No. 4 300
16, " " 5 . . . . . rig
16, C. W. Canfield 100
16, Daggett Farm Oil Co., No. 6 . . . . rig
16, " " 7 200
16, " " 13 400
16, " " 14 100
16, " " 15 . . rig bldg
21, Wells & Cassidy 200
21, Willets & Cranston . . . . . rig
23, A. J. Gartland . . . . . rig
24, R. R. Armor . . . . . sand
24, Unknown . . . . . rig
24, Willets & Cranston, shut down . . . 1000
29, " . . . . . sand
29, " 1400
29, " . . . . . sand

Drilling 34
Rigs 39
Total 73

Summary.

RIGS UP AND WELLS DRILLING.

	Rigs.	Drill.	Total.
Scio	5	5	10
Alma	22	24	46
Wirt	24	27	51
Bolivar	132	125	257
Clarksville	6	2	8
Genesee	39	34	73
Total	228	217	445

BRADFORD DISTRICT.

TUNA VALLEY.

Leonard, D. S. Allen . . . . . rig
Scott pur., Hillman & Beatty 300
" Abbott & McGinnis . . . . . rig bldg
Clark, Boggs & Curtis . . . . . drilling
McClure, McClure & McKellop . . . . rig bldg

EAST BRANCH.

E. T. Co., Benner Bros. No. 11 . . . . . sand
" Enterprise Transit Co., No. 30 . . 1000
Hawkins, P C L & P Co. P. T. Kennedy No 11. rig
Shady, Watson & Fulton. No. 4 . . . . . drilling
Drake, Fuller, Morris & Co., No. 9 500
Cutting, Guy Drake, No. 2 600
Clapp, J. M. Clapp 200
W. Brown, Morris Bros. 300
B. I. Taylor, Bovaird & Seyfang . . . . rig
" Breckenridge & Harper . . . . rig
" Risher & Zeigler, No. 5 100

Brown, Gilbert, Shipman & Co. 500
Deiter, Emery Oil Co., No. 16 500
" " " 17 . . . . . rig
Morris, " " 35 . . . . . drilling
" " " 36 100
" " . . . . . 3 rigs
Tibbetts " No. 2 . . . . . drilling
" " " 3 100
Dikeman, Whitney & Wheeler . . . . . sand
" " . . . . . drilling
" " . . . . . rig
Salem, Quintuple Oil Co, No. 10 . . . . . rig

Drilling 18
Rigs 12

Total 30

QUINTIPLE.

Lot 14, J. S. Wilson, No. 3. . . . . rig
25, " " 2. . . . . rig
42, Tarbell & Morris, No. 2 . . . . . sand
55, B. F. Brinton, No. 2 700
64, " 3 . . . . . rig bld'g
72, E. K. West, No. 4 500
103, Geo. Woodard, No. 2. . . . . rig bld'g
111, Gardner & Heasley, No. 2 . . . . . drill
111, " " 3 . . . . . rig
132, Woodbury & Campbell, No. 3, fishing 800
152, H. I. Beers 1400
153, E. Strong & Co . . . . . sand
156, Chemung Oil Co 700
166, E. Strong & Co 900
167, " No. 2. 1500
167, " " 3. . . . . rig
175, D. Atwater & Co . . . . . rig
176, H. A. Booth & Co . . . . . rig
180, Heald & Scisco 1400
188, Jennings, Hunter & Co 200
197, Heald & Co . . . . . rig
203, Butler & Martin . . . . . rig
212, Kane City Oil Co. 200
226, Geo. McCullagh 400
232, J. A. Wing & Co., No. 3 . . . . drilling
233, " " 3 . . . . rig bld'g
237, " " 3 1700
217, " " 4 600
239, Sherman Bros 1200
241, Barnsdall Bros., No. 2, shut down . 500
242, Asher Brown, No. 3. . . . . rig blid'g
256, Berry & Kelley. . . . . rig
258, Burrows & Co., No. 5. . . . . rig
260, Conover, Kelley & Co . . . . . rig
262, Hamburg Oil Co 1400
271, Eaton & Bundy, No. 4 . . . . . rig
277, Baker & Co., No. 2. 1200

WEST BRANCH.

Gas Hollow, A. F. Heald, No. 3. 200
Crooker, Hazleton Bros . . . . . rig
Stinson, J. G. Williams . . . . . rig
Cranmer, Chapin & Co., ... rig

KENDALL CREEK.

Melvin, P. C. L. & P. Co., No. 54 . . . . . rig
" " " " 55 . . . . . rig
" " " " 56 . . . . . rig
Buchanon, Anchor Petroleum Co., No. 14 . . rig
Davis, Adams . . . . . rig
Mack, E. K. West, No. 17 . . . . . rig
Fisher, Larabee & Whedon, No. 3 800
Fisher, Peck & Freeman, No. 17 1000
Corwen, Peck & Freeman . . . . . rig
Richardson, " . . . . . rig
Turner, M. Crow . . . . . rig
Turner, Wm. Taggett, No. 6 . . . . . rig
Moore, Moore & Butt 1000
Dolloph, Tarball & Robinson 1100
Shedd. P. Buchanan . . . . . rig bldg
Monroe Simpson 300

FOSTER BROOK.

Willetts, O. Smith Oil Co., No. 8 . . . . . rig
" Willets . . . . . rig
" Willetts & Co . . . . . 2 rigs
Borden, Howe Bros. . . . . rig
Ent. Trans. Co., F. W. Mitchell, No. 2 . . . 200
B. & R. Baum & Richardson. . . . . sand
Foster, C. H. Foster . . . . . rig
C. B. & H. Treat & Porterfield, No. 5 . . . 500
" " " lot 31 . . . rig
" " " rig bldg
A. J. Caldron, No. 57. 600
Young & Hugus, No. 4. . . . . rig
Argue Bros. & Cobb, No. 16 200
Eighmie Bros., No. 3 . . . . . drilling
Wolf & Dreibelbis 700
Seiple Bros. . . . . drilling
Ralph Bros. & Co., No. 3 . . . . . rig
Burns & Monroe . . . . . rig
Chauncey Sharp 600
Porter & Gilmor 600

Drill 36
Rigs 42

Total 78

SUMMIT, MARION AND RIXFORD.

Borden, Urquhart, Wallace & Lavens, No. 2, 300
" Bowers & Howell 700
" Shear Bros. & Brownshwager, No. 9 fishing . . . . . sand
" " " No. 13, rig
Whitcomb, John Onsel, No. 4 . . . . . drilling
Mather, C. B. Whitehead 1400
" " . . . . . rig
Irons, Duke Center Gas Co . . . . . rig
Berger, H. J. Pemberton 1100
" " . . . . . rig bldg
Schoonover, Schoonover . . . . . rig
Book, Hazlewood Oil Co., No. 38 200
" " " 39 1000
" " " 40 . . . . . rig

OIL VALLEY.

John Duke, Coffin & Co. No. 23 1000
Charles Duke, Charles Duke . . . . . rig bldg
Hamlin, J. B. Danniels, No. 17 200

STATE LINE.

Bowden, Forman & Lawton 600
" " 200
" " . . . . . rig bldg
" Smith & Jones 500
" Fertig & Henne 1000
" " 500
" " . . . . . rig bldg
Fullerton, Angell Oil Co. . . . . 4 rigs
Angell Oil Co., Angell Oil Co., No. 29 . . . rig
" " " 30 . . rig
" " " 31 . . . 200
" " " 32 . . . rig
" " " 35 . . . 200
" " " 36 . . . 600
" Johnson & Co., No. 8 . . . . rig
" Wright, Vandergrift & O'Dell 400
Barse tract, George V. Forman . . . . . rig
" Union Oil Co 800
" lot 188, J. D. Downing & Co . . rig

INDIAN CREEK.

Hamlin, Forest Oil Co., No. 32 . . . . . sand
" " " 33 . . . . . rig
" Triangle Oil Co 600
" Tupper . . . . . drilling
" Boyne, Adams & Co . . . . . drilling
Miles Loup, James O'Neil, No. 10 . . . . . rig
" " " 11 . . . . . rig
H. Loup, Sloan & Downing . . . . . rig bldg
" Kribbs & Stevenson 300
Pine Lot, Evans Bros . . . . . rig
Dodge, Frank Hardwick . . . . . rig

MEEK'S CREEK.

Weston, J. L. McKinney 100
Gale, Curtis & Taylor, No. 5 . . . . . rig
" " " 6 . . . . . rig
" Moore & Watson . . . . . rig
" Thompson & Canfield . . . . . rig

FOUR MILE.

VanCampen, lot 87, Geo. VanCampen . . . rig
" Howe & Talcott 300
" " . . . . . rig
" R. W. Evans 600
Jos. Waters, Howard & Baum, No. 13, fishing, 1300
" Chas. Gilespie . . . . . rig
Baum pur., Waco Oil Co . . . . . rig
Shattuck, Eaton & Howe . . . . . rig
Dye, Coleman, Bell Bros. & Kervin, No. 4 . 1000
Chamberlain, Henry Chamberlain, No. 2 . . rig
Jas. Moulthros, Moulthros Bros 400
Bucher, Wm. Bucher, No. 9 . . . . . rig
" " " 10 . . . . . rig bldg
McCartney, G. W. Funk, No. 3 . . . . . rig
Donahugh, Brown & Norris . . . . . rig
Quartette, Brahaney & Duncan, No. 4 . . . 1500
" Quartette Oil Co., No. 21 . . . . . rig
" " " 22 100
Stevens, Book & Rhodes . . . . . drilling
" Dudley & Palmer, shut down . . . 1200

Drills 35
Rigs 39

Total 74

BIG SHANTY.

P. C. L. & P. Co , No. 25 1000
" " 26 200
" " 27 . . . . . rig
" " 28 . . . . . rig
Dent Oil Co., No. 16 . . . . . sand
" " 17 . . . . . rig bldg
" " 18 . . . . . rig bldg
Bowen, Wilcox & Co., No. 3, fishing 240
Moody Tract, Moody Co., No. 81 . . . . drilling
" " 83 1800
" " 84 1600
" " 85 200
" " 86 . . . . . rig
" " 87 . . . rig bldg
Lot 53, Jennings & Co., No. 4 . . . . . rig
65, Hickory Oil Co . . . . . rig
Bingham, Lot 176, Fertig & Henne, No. 5, fishing . . . . . sand
Bingham, Lot 176, Fertig & Henne, No. 7 . . rig
" 176, " " 8 . . rig
" 176, " " 9 . . rig
" 180, Hamlin & Rose, No. 3 . . rig
" 180, " " 4 rig bldg
Sullivan, Mullen & Mills, No. 7 . . . . . drilling
" " . . . . . rig
" Waugh & Porter, No. 4 600
Warrant 2256, John McKeown, No. 2 . . . sand
2256 " " 3 . . . 1500
2256, U. A. Andrews . . . . . rig
2256, Bennett & Mullen . . . . . rig
2256, Grace & Goldsborough . . . sand

Drilling 14
Rigs 16

Total 30

COLE CREEK AND BINGHAM.

Bingham, Nina Oil Co . . . . . rig
" Trio Oil Co . . . . . rig
Bingham, M. W. & H., W. W. Thompson, No. 8 . . . . . rig
" M. W. & H., W. W. Thompson, No. 9, rig
" Lot 265, Tucker & McCormick, No. 3 . rig
" 387, P. T. & W. C. Kennedy, No. 10 . . . . . drilling
" 405, Forest Oil Co., No. 7 . . . . . rig
" 405, " " 8 . . . . . rig
" 407, Bennett & Quick . . . . . rig
" 453-4, Bayne, Fuller & Co., No. 42 . sand
" 278-9, Cumulative Oil Co., No. 8 . rig
" 491, Forman & Union Oil Co., No. 9, 1300
" 491, " " 10, 100
" 491, " " 11, rig
" 417, " " 14, 400
" 417, " " 16, rig
" 417, " " 17, rig
" 418, " " 14, 1300
" Ford tract, " " 13, rig
" " " " 14, rig
" Lot 488, Johnson & Union Oil Co. No. 25b . . . . . rig
" 415, Johnson & Union Oil Co., No. 113 . . . . . rig
" 492, Johnson & Union Oil Co., No. 36b 1500
" 493, Johnson & Union Oil Co., No. 37b 200
" 492, Johnson & Union Oil Co., No. 41 . . . . . drilling
" 492, Johnson & Union Oil Co., No. 40 . . . . . rig bldg
" 493, Johnson & Union Oil Co., No. 30b 100
" 409, J. L. McKinney & Co., No. 9, ... drilling
" 409, J. L. McKinney & Co., No. 9, rig
" Moore, lot 67, Geo. V. Forman, No. 1 . . 1200
" Bingham, " " 20 . . 150
" Simpson, " " 13 drilling
" " " " 14 . . 200
" Forman, " " 2 drilling
" " " " 3 . . 200
G. and Van V. pur., Union Oil Co., No. 15 . . 600
" " " 16 . . rig
" " " 17 . rig
" " " 25 . . rig
" " " 26 . . rig
" " " 27 . . 1500
Brown & Kellar, E. Duthil 1100
Bordell, Short Oil Co . . . . . sand

Drilling 21
Rigs 22

Total 43

KINZUA.

Bingham, J. M. & Thos. Tait . . . . . rig bldg
" Union Oil Co., No. 33, fishing . . 1000
" " " 34 . . . drilling
" Cornwall, Parker & Hasson, No. 34, 350
" " " 35, rig
" C. P. Byrom 500
" Baker & Malone, No. 18 500

VANSCOY SECTION AND SUGAR RUN.

Richardson, Chapin & Co . . . . . near sand
" Wright & DeGolier, fishing . . 200
Campbell, lot 13, Duke & Harris 600
Chapel Fork, Brown & Co . . . . . rig
McIntyre, Wright & De Golier . . . . . rig

MISCELLANEOUS.

Prentiss Mills, A Prentiss 200
Elk Co., warrant 3, 655, T. W. Larsen & Co . rig
" Unknown . . . . . rig

Drilling 9
Rigs 6

Total 15

WARREN DISTRICT.

CLARENDON.

Lot 55, Beatty . . . . . rig
77, O. Hoffman 700
77, Joe Clinton 700
77, Wynkoop . . . . . rig
78, Beatty . . . . . 3 rigs
78, " . . . . . 2 rigs bldg
79, Anchor Petroleum Co . . . . . rig
79, M. Butler & Co , No. 2 500
79, Marsh, Robinson & Kuhn, No. 6 . . 300
80, D. H. Thayer, No. 2 200
80, Theo. Barnsdall . . . . . drilling

Lot 80, Theo. Barnsdall . . . . . rig bldg
80, May & Groves, No. 2 700
80, Winsor Bros., No. 8 800
80, " " 9 100
80, " " 10 . . . . . rig bldg
80, " " 11 . . . . . rig bldg
105, Atkinson & Co., No. 5 500
105, Short, Oyster & Co., No. 6 . . . . rig
105, Brinton & Co . . . . . sand
105, Fisher & Weaver, No. 4 . . . . . rig
105, Shugert & McFouth, No. 2, fishing . sand
106, Archbold & McClure, No. 4, fishing, 200
107, F. B. Malone, No. 4 . . . . . rig
108, Grandin & Hague . . . . . rig
108, Duke & Harris . . . . . rig
108, Eureka Oil Co., No. 3 . . . . . drilling
109, Little Toby Oil Co., No. 4 200
161, Grandin & Hague 100
498, Hopewell, Payne & Co., No. 2 . . drilling
498, W. Hopewell, No. 4 300
498, " " 5 . . . . . rig
498, Waters, Dennison & Co., No. 2 . drilling
498, F. Pratt & Co., No. 2 . . . . . rig bldg
498, " " 3 . . . . . rig bldg
498, Stoughton, No. 2 . . . . . rig bldg
498, Geo. Given, No. 2 . . . . . sand
498, " " 3 . . . . . drilling
498, " " 4 . . . . . rig bldg
498, Lapham & Co . . . . . rig
498, Conrath, No. 1 . . . . . drilling
498, " " 2 . . . . . rig bldg
498, D. H. Estep, No. 3 . . . . . rig
498, Peter Grace . . . . . rig
499, Grosh, Hamsher & Co., No. 1 . . . sand
499, Merrill & Co., No. 2 . . . . . drilling
499, Taggert & Co., No. 2 200
494, M. Katz . . . . . rig
528, Nickle, Munn & Co., No. 2 200
528, George Marsh & Co., No. 2 . . . . rig
528, Armstrong & Speer, No. 8 . . . . drilling
528, " " 9 100
528, O'Connor & Reed . . . . . rig
528, Wm. Green, No. 1 300
528, Borcher & Co., No. 1 700
529, Jamestown Oil Co., No. 2 . . . . drilling
530, Bradenburg & Co., No. 2 100
530, Forber & McConnell 150
530, Waugh & Co 500
556, Cornen & Co . . . . . rig
557, J. Bryan, No. 3 200
557, " " 4 . . . . . rig bldg
Bugbee, J. Bryan . . . . . rig

GLADE.

Asylum lot, H, A. Jameson . . . . . rig
Reige, Marsh & Brown 400
Eccop, John Bell . . . . . rig
Cahley, McWilliams & Green . . . . . rig

SHEFFIELD

Lot 368, Magee & Horton . . . . . rig
396, Horton & Crary . . . . . drilling
408, Magee & Horton 400
408, " . . . . . drilling
408, " . . . . . rig bldg
Lot 408, Wetmore & Co., No. 7 500
408, " " 8 . . . . . rig
408, " " 9 . . . . . rig
408, " " 10 . . . . . rig
438, Emerson, Shank & Co . . . . . rig
Henry's Mills, H. B. Porter . . . . . rig
Williamson, Emery & McKinney . . . . . sand
Lot 212, Truby & Co . . . . . rig

FOREST COUNTY

Warrant 2,730, Reno Oil Co . . . . . rig
Bear Creek, J. Cornwall, fishing 1750
Balltown, May & Kelly 1600
Warrant 5,211, Tionesta Oil Co 200
Lot 41, Mainwaring & Co . . . . . rig bldg
Warrant 5,210, Unknown . . . . . rig bldg

Drilling 44
Rigs 45

Total 89

LOWER DISTRICTS

BYROM CENTER.

D. M. Crawford, D. M. Crawford & Co . . rig
" Rowley, Graham & Co . 450
A. Anderson, Trout Run Oil Co . . . . . rig
Sedgwick, " fishing . . . 1000
J. E. Miller, Adams, Story & Tash . . . rig
Grant, Grant Bros 800
E. Robinson, Swan, Dram, Welsh & Co. . . rig
D. Sloan, Duncan & Dodd 100
A. Gay, J. P. Crawford & Co 150
John Sutton, Thos. Hays . . . . . rig bldg

VENANGO.

McCalmount, P. McCalmount 800
McBride, McBride & Co., No. 3 800
Morrison, Oscar Wilde Oil Co 400
Galey, Kugler & Co., No. 4 800
" " " 5 . . . . . rig bldg
Rouseville, John Hersh 700
Allison, Fisher Bros 500
Pin Oak, " . . . . . rig
Espy, George Espy 100
Bully Hill, Geo. Robinson . . . . . sand

BUTLER AND ARMSTRONG.

Hoffman & Piersol, Bald Bidge Oil Co . . . rig
John Weber, " . . . rig
Mohood, " . . . rig
Shorts, " . . . rig
Heckert, " . . . rig
Hammill, Simcox & Myers 1600
Miller, Morrissey & McConnell 400
Fleeger, Highland & Co 400
Crawford, Widger & Co., fishing 1400
B. B. I. Co., Davis Bros . . . . . rig
Kelly, Tash & Walls 1200
Clarke, A. Crittenton & Co . . . . . rig
M. Gillespie, Big Venture Oil Co 800

CLARION.

Wentling, Wentling & Putnam . . . . . rig
Weller, Friar & Co . . . . . rig
" Laney Bros 600
Fillman, J. Fillman & Co . . . . . rig
Kiser, J Black, Jr., & Co 100
Uptegraff, Jenerette Bros 700
Call, Smith & Butler 900
Edenburg, J. D. Callahan . . . . . rig

Drilling 23
Rigs 18

Total 41

HEAVY OIL.

WELLS COMPLETED.

Lot.	*Operator.*	*Barrels.*
Galloway,	H. Sheasley	2
"	Harper Bros.	2
"	D. Grumm	2
"	H. Shaw	1
Gillingham,	Cane	1
Evans,	F. T. Sutley	2
"	D. Drumm	2
Bissell,	Sheasley & Co.	1
McCormick,	Heasley & Co.	dry
Galena,	Galena Co.	1
W. Carter,	Sheasley & Co.	dry
Kelley,	W. S McMullin	1

Wells 12
Production 15
Average 1¼

WELLS DRILLING.

Galloway, Grumm & Co. . . . . drilling
" J. Bracken . . . . . rig
Gillinham, Cane . . . . . rig
Rheem, Gabe Smith . . . . . rig
Smith, Acme Co. 500
" " . . . . . rig
McCalmont, J. Hanna 300
Kunkle, John Rumph 500
Bleakley, F. T. Sutley . . . . . rig
" " . . . . . rig
Stewart, Stewart . . . . . rig
Fitzgerald, Tack Bros. 400
Evans, J. Hurley . . . . . sand
Gillingham, E. D. Yates 300
Eggbert, Eggbert . . . . . rig

Drilling 7
Rigs 8

Total 15

CRUDE OIL MARKET.

MONTHLY AND YEARLY AVERAGE PRICE OF PIPE LINE CERTIFICATES OR CRUDE OIL AT THE WELLS, IN BARRELS OF 42 GALLONS EACH.

A. D.	Jan. Ave'age	Feb. Ave'age	March Ave'age	April Ave'age	May Ave'age	June Ave'age	July Ave'age	Aug. Ave'age	Sept. Ave'age	Oct. Ave'age	Nov. Ave'age	D'emb'r Ave'age	Yearly Avrges.
1859.	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	20.00	20.00	20.00	20.00	20.0
1860.	19.25	18.00	12.62½	11.00	10.00	9.50	8.62½	7.50	6.62½	5.50	3.75	2.75	9.6
1861.	1.00	1.00	1.00	.62½	.50	.50	.50	.25	.20	.10	.10	.10	.
1862.	.10	.15	.22½	.50	.85	1.00	1.25	1.25	1.25	1.75	2.00	2.25	1.4
1863.	2.25	2.50	2.62½	2.87½	2.87½	3.00	3.25	3.37½	3.50	3.75	3.85	3.95	3.0
1864.	4.00	4.37½	5.50	6.56	6.87½	9.50	12.12½	10.12½	8.87½	7.75	10.00	11.00	9.15½
1865.	8.25	7.50	6.00	6.00	7.37½	5.62½	5.12½	4.62½	6.75	8.12½	7.25	6.50	6.87
1866.	4.50	4.40	3.75	3.95	4.50	3.87½	3.00	3.75	4.50	3.39	3.10	2.12½	3.59
1867.	1.87½	1.85	1.75	2.07½	2.35	1.90	2.62½	3.15	3.40	3.55	2.50	1.87½	2.74
1868.	1.95	2.00	2.55	2.82	3.75	4.50	5.12½	4.57½	4.00	4.12½	3.75	4.35	3.41½
1869.	5.75	6.95	6.00	5.70½	5.35	4.95	5.37½	5.57½	5.50	5.50	5.80	5.12½	5.63¾
1870.	4.52½	4.52½	4.45	4.22½	4.40	4.17½	3.77½	3.15	3.25	3.27½	3.22½	3.40	3.89
1871.	3.82½	4.38	4.25	4.01	4.60	3.85½	4.79	4.66	4.65	4.82½	4.25	4.00	4 34
1872.	4.92½	3.80	3.72½	3.52½	3.80	3.85	3.80	3.58½	3.25	3.15	3.83½	3.32½	3.64
1873.	2.60	2.20	2.12½	2.30	2.47½	2.22½	2.00	1.42½	1.15	1.20	1.25	1.00	1.83
1874.	1.20	1.40	1.60	1.90	1.62½	1.32½	1.02½	.95	.95	.85	.55	.61½	1.17
1875.	1.03	1.52½	1.75	1.36½	1.40	1.26½	1.09	1.13	1.33	1.32½	1.44	1.55	1.35
1876.	1.80	2.00	2.01	2.02¼	1.90½	2.01¾	2.24½	2.71	3.81	3.37½	3.11	3.73	2.56¼
1877.	3.53¼	2.70	2.67½	2.58	2.24	1.94⅝	2.07½	2.51	2.38	2.56¾	1.91	1.80	2.42
1878.	1.43	1.65¼	1.59	1.37½	1.35¼	1.14	.98¾	1.01⅜	.86½	.82½	.89⅜	1.16	1.19
1879.	1.03	.98	.86¼	.78½	.76	.68⅜	.69⅞	.67⅛	.69½	.88½	1.05⅝	1.18⅛	.85⅞
1880.	1.10¼	1.03⅛	.88¼	.78	.80	1.00	1.06¼	.91	.96	.96⅞	.91⅞	.91⅝	.94½
1881.	.95½	.90⅜	.83⅜	.86¾	.81⅞	.81¼	.76⅞	.78⅝	93.3–16	.94¾	.83	.84	.85¾
1882.	.83¼	.85¾	.80⅞	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .

THE OUTLOOK.

IN the Bradford field, on the last day of February, there were 12,004 producing wells. This calculation was made by competent gentlemen, who devoted time and money to obtain the facts. The average yield of each well for February was placed at 4 55-100 barrels, making a total of 54,618 barrels for the district. During March, though there was added 1,735 barrels from the 121 new wells completed, the production of the field declined 2,886 barrels a day. This would place the production of the field at the end of March at 51,732 barrels. Most statisticians place the aggregate above this amount, but we fail to find the figures to prove it. There seems to be no possible chance for the decline which set in early in the fall of 1881 to receive any important check, and the depreciation must continue. There is, of course, considerable small territory yet to drill within the confines of the field, but the new wells to be drilled will not even sustain the production of the leases or tracts upon which they are to be located.

ALLEGANY.

Allegany's average for March has increased 1,820 barrels, and judging from all appearances it has about reached its maximum. It would seem next to a miracle to increase the daily yield there to any great extent under present circumstances. The addition of new territory would, of course, spoil this hope, but until then we can view the condition in no other light than that it must soon subside somewhat. There are now 1,040 producing wells, with room for about as many more. The remainder, however, will be drilled on the lighter portions of the territory, and will serve in maintaining the production for some time at a figure perhaps not far from its present rate. The list of new operations it will be seen is a trifle greater than it was on the first day of March, and, as a consequence, 210 new wells ought to be completed during "all fools" month. The wells of March have a large average, owing largely to the increased use of glycerine.

WARREN.

The Warren field is looking up somewhat. The noted "646" well, owned by Grace Dimic and others, has reached the vital spot, and has occupied the attention of the trade for two weeks in a rather obnoxious manner. The well is situated about 6 miles west of Sheffield, and about the same distance southwest of Clarendon. It is favorably located for an "eye-opener," and extends the paying territory at least the distance at which it is separated from the other points. It, of course, remains a question to be solved whether the whole line from Clarendon to the well is to prove paying territory, or whether it does not open another Warren County spot. In the first, or December, number of the AGE this field received considerable attention, and it was then stated that, owing to the fact that third sand rock was known to exist in every quarter of the county southwest of Warren, numerous pools of oil were liable to be found. This well is, therefore, no particular surprise, except as to magnitude of capacity as a producer.

NEW USES FOR PETROLEUM.

IT is interesting to note the progress that is being made in the art of using petroleum as a steam generator. In many of the largest manufactories of the East, appliances are being introduced for its use in firing large boilers, and even railroad locomotives are among the many agents which are shortly to be made use of for the tests. In all cases where tried it has proven entirely satisfactory, performing more than was expected of it. In the case of the Long Island Railway, which was persuaded to give it a trial during the last week of March, the result was so pleasing, that the managers have decided to abolish the use of coal altogether during the summer season, and doubtless as long as the price of the article does not interfere with the usual division of net gains. It is expected that the Trunk lines will also adopt it as fuel on all passenger train engines, as it is perfectly free from smoke or cinders, both of which are a terrible annoyance to passengers during warm weather especially.

Then there are other interesting features in this branch of its usefulness. Many of the large as well as smaller cities have permitted its manufacture and sale within their corporate limits, and daily we learn of fresh additions to these ranks. The latest is from the ancient City of Tucson, Arizona Territory, where a company has been granted by the city authorities certain franchises for its utilization, extending 25 years. About the 20th of March last, the works were completed, and old Tucson shone out in the darkness with a brilliancy never dreamed of. The crude oil is shipped thither in bulk. What Tucson has done will be done by hundreds of other cities in the immediate future. From this source alone several thousand barrels a day are now being con-

sumed, and this amount will continue to augment from day to day.

Away over in Russia, where the conveniences for its use are by no means what America can boast of, it is applied with great success to furnaces. Upon the Balachanskio Railway the locomotives are heated with crude naphtha, which is introduced into the tender as it comes from the wells, and there have been no accidents resulting from its use. All the ships upon the Caspian Sea are heated exclusively with the liquid combustible, the cost being only half as great as that of coal. Experiments which have been made upon some of the railways show that a kilogramme of naphtha is equivalent to 8½ kilogrammes of wood, although the theoretic heating power is only three times as great. The use of petroleum with injectors for introducing it into the furnaces is very convenient—the combustion can be regulated with the greatest ease; the furnaces last much longer on account of the absence of sulphur; there are no cinders, smoke or sparks, and the work of the stokers is greatly simplified.

It is true capitalists have discovered the great worth of the article for purposes such as above described, and companies are forming in every part of this nation for the manufacture of gas from its products, for lighting and heating. It, however, is a cause of no little astonishment that the authorities in many cases seem hostile to its introduction, and with the greatest difficulty corporations succeed in obtaining franchises for its utilization. Buffalo has been undergoing just such a siege. Coal gas manufacturers are using every effort at their command to prevent its successful introduction, and even go so far as to squander funds among council men and legislators generally. Nevertheless, the good work goes on. It is but a question of a very short period till the whole country is shining in the brilliancy of petroleum light, and until commerce is conducted by the force of its heating power.

THE ALLEGANY OUTLINES.

THE Park & Baum Well near the northwest corner of lot 37, Bolivar, is the most important venture completed in that field for a period of 30 days. It demonstrates to a certainty the reliability of the AGE map printed last month. The outlines of the territory called light are set near the northern boundary of lot 44, though it is barely possible that there will occur some extensions even lower than indicated. The well named, which is held as a mystery, may be safely put down as a paying venture.

At the Parkman Well in 17, Clarksville, also a new strike has been completed, which, though it does not enlarge the boundaries, as defined by the blood-stained map, surprised the operators of that section by showing up superior to any well yet sunk in the latitude.

In the Allentown section, some drilling has been in progress in the territory called "light or gas" and "very light." During March a well was completed near Allentown, in which a good specimen of sand-rock was found, together with a fair showing of oil. The well, it is said, ranks among the 8 or 10-barrel producers.

In no other corner of the field has there been anything of a peculiar or striking character to which attention may be called at this time. A disposition to over-ride the barriers in the form of dusters in Central Bolivar has been manifest for some time. Some are of the opinion that these failures—Taylor, on 37, Bradley, on 27, Mattson, on Jacqueus Farm, and Morse & Williams, on lot 20—prove nothing except the existence of sand-rock. There have been so many transformations from dust to oil throughout the field, that it is no wonder this opinion ripens. Certain sections have been shunned for a season, owing to causes that seemed for the time being of a substantial character, and afterwards the territory was found to be very good. This was true of lots 8, 15, 16, 30 and 29, Genesee, and 9, Clarksville, also a portion of 33 and 25, Wirt. Then again along the south ends of lots 47, 39 and 31, the prolific territory extended far beyond the original calculations of the operators there. There is, however, a limit somewhere. The Waugh & Porter Well, on lot 34, is a very small well, and the territory between that point and 37, Bolivar, though it might prove of some value in spots, cannot be looked upon as dangerous in its wealth of crude. Thus far, therefore, the field does not enlarge beyond the scope estimated months ago, and, until something of a more serious character occurs, the trade may rest easy as to the extension of Allegany. The daily yield has not increased in the field since the first of April, and may have passed its zenith. If so, we shall be forced soon to record a serious decline.

CONSIDERABLE attention is now being paid by consumers of coal for heating furnaces throughout the country to the subject of applying petroleum. At present prices for the commodity, there will be a large increase in its use in this direction in the near future.

STATEMENT made by the United States Pipe Lines July 10th, 1880, and enlarged to March, 1882. It gives gross stocks, sediment and surplus, net stocks, outstanding balances, receipts (or runs) from all sources, and total deliveries:

	Gross Stocks.	Sediment and Surplus.	Net Stocks.	Outstanding Acceptances.	Credit Balances.	Receipts from all Sources.	Total Deliveries.
1877—April	1,895,153.71	77,386.70	1,817,767.01	449,640.14	1,368,126.87	200,570.81	125,797.90
May	1,762,602.64	75,363 87	1,687,237.77	663,663.71	1,003,574.06	493,200.58	619,612.26
June	1,596,367.68	81,255.42	1,488,112.26	661,786.57	826,325.69	538,906.95	737,609.77
July	1,482,433.51	81,741.50	1,400,692.01	667,166.36	733,625.65	615,145.46	699,476.18
August	1,489,052.53	81,144.63	1,407,907.90	643,281.46	764,626.44	673,403.04	666,144.28
September	1,339,032.27	67,163.68	1,271,868.59	552,676.26	719,192.33	625,225.37	769,745.57
October	1,434,728.78	46,771.99	1,387,956.79	673,850.05	714,106.74	687,094.59	570,092.71
November	1,691,399.52	39,418.00	1,651,981.52	657,591.36	994,390.16	913,644.19	649,242.70
December	2,830,413.36	68,729.63	2,761,685.73	754,338.25	2,007,347.48	1,656,150.37	506,332.99
1878—January	3,124,641.15	72,453.43	3,052,187.72	864,711.41	2,187,476.31	872,681.18	715,149.78
February	3,439,526.98	82,452.66	3,357,074.32	1,404,292.13	1,952,782.19	1,030,688.44	720,478.14
March	3,940,000.65	92,963.06	3,847,037.59	1,487,430.50	2,359,598.09	1,196,251.26	701,681.27
April	4,335,274.84	133,935.76	4,201,340.08	1,615,791.19	2,585,548.89	1,137,359.40	778,050.53
May	4,609,681.45	150,117.76	4,459,563.69	2,065,333.31	2,394,230.38	1,104,352.40	843,081.33
June	4,719,699.25	181,800.03	4,537,899.22	1,950,420.81	2,587,478.41	1,092,604.02	1,004,474.55
July	4,885,851.72	229,080.78	4,656,770.94	2,078,466.56	2,578,301.38	1,258,648.45	1,108,074.33
August	4,571,658.59	217,085.19	4,354,573.40	2,064,590.75	2,289,982.64	1,195,268.67	1,496,009.04
September	4,410,061.84	225,088.86	4,184,972.88	2,705,853.95	2,479,119.03	1,182,118.57	1,318,265.33
October	4,072,267.43	234,050.89	3,838,576.54	1,517,484.27	2,321,092 27	1,271,174.73	1,564,984.43
November	4,083,972.42	216,655.30	3,867,317.12	1,784,443.35	2,082,873.77	1,159,623.71	1,129,047.42
December	4,098,200.92	201,470.30	3,896,730.62	1,741,311.07	2,155,419.55	972,338.83	924,035.93
1879—January	4,759,031.41	182,707.80	4,576,323.61	2,153,763.83	2,422,559.78	1,231,237.19	546,271.74
February	5,157,646.15	171,689.80	4,985,956.35	2,346,238.22	2,639,718.13	1,055,377.95	643,828.71
March	5,503,768.71	190,797.91	5,312,970.80	2,484,861.83	2,828,088.87	1,363,512.17	1,029,029.70
April	5,885,675.24	211,957.06	5,673,718.18	2,644,301.36	3,029,416.82	1,379,349.76	1,015,482.04
May	6,180,843.53	315,992.98	5,864,850.55	2,522,846.36	3,342,364.19	1,488,514.31	2,228,043.27
June	6,426,802 45	334,457.29	6,992,345.16	2,959,921.12	3,132,424.04	1,437,250.90	1,204,557.54
July	6,419,699.08	323,295.32	6,096,403.76	2,323,575.29	2,772,828.47	1,472,651.01	1,465,518.05
August	6,380,606.63	300,345.15	6,078,261.48	3,581,224.03	2,497,037.45	1,714.620.11	1,728,940.81
September	6,589,859.83	325,363.85	6,264,995.98	3,783,480.38	2,481,015.60	1,691,863.41	1,455,811.45
October	6,701,209.87	299,393.67	6,401,816.20	3,788,155.65	2,613,660.55	1,646,725.06	1,502,991.20
November	6,951,133.67	303,641.17	6,647,492.50	3,927,300.18	2,675,192.32	1,600,961.29	1,328,621.19
December	7,362,409.76	294,571.37	7,067,838.39	4,235 459.40	2,832,378.99	1,771,781.24	1,331,822.12
1880—January	7,735,257.38	295,517.60	7,439,739.78	4,436,788.55	3,002,951.25	1,832,963.04	1,145,194.98
February	8,187,012 49	322,568.93	7,864,443.56	4,602,286.49	3,262,157.07	1,607,663.89	1,178,111 92
March	8,621,097.49	351,130.35	8,969,967.14	4,811,894.33	3,458,072.81	1,815,133.31	1,396,037.88
April	9,662,354.59	388,558.16	9,273,766.43	5,846,536.60	3,427.259.83	1,739,297.37	723,794.73
May	10,306,078.79	454,193.73	9,851,885.06	6,361,320.05	3,490,565.01	1,552,240.91	975,061.26
June	11,266,771.77	477,431.60	10,789,340.08	7,397,131.89	3,392,208.19	1.781,937.29	848,339.08
July	12,039,010.00	475,446.56	11,563,563.44	8,125,241 25	3,438,332.19	1,890,161.44	1,095,528.25
August	12,749,623.28	462,987.28	12,286,636.00	8,635,394.80	4.651,241.20	1,904,452.70	1,177,448.42
September	13,618,276.03	382,398.71	13,236,327.32	9,287,193.94	3,949.133 38	2,075,105.26	1,115,184.71
October	14,020,877.32	391,331.55	13,629,545.84	9,448,615.77	4,180,930.07	1,999,487.98	1,598,285 06
November	14 656.891 55	341,262.67	14,315,628.88	10,038,824.08	4,231.804 80	1,859,991.50	1,064,146 39
December	15,369,758.67	361,184.83	15,008,573.48	10,913,283 49	4,095.290.35	1.987,283.54	1,207,928.35
1881—January	16,291,307.87	360,688.98	15,930,618 89	11,672,583.61	4,258,035.28	1,876,526.50	931,818.71
February	17,355,485.31	391,616.47	16,936,868.84	12,029,594.35	4,934,274.49	1,823.713.46	781,745.93
March	18,488,476.94	432,304.19	18,056,172.75	13,099,262.44	4,956,910.31	2,222,812.39	1,116,695.11
April	19,560,752.23	517,422.38	19,043,329.85	13,846,285.20	5,197,044 65	2,182,636.96	1,183,779.02
May	20.591,177.33	640,662.03	19,950,455.30	14,608,124.70	5.342.330.60	2,278,582.78	1,356,688.23
June	21,397,698.53	756,412.85	20,641,285.68	14,738,828.77	5.902,456.91	2.318,445.18	1,545,448.13
July	21,982,161.42	774,402.94	21,207,758 48	15,150,267.23	6,057,131.25	2.396,472.50	1,756,044.15
August	22,474,105.51	800,343.43	21,673,762.18	15,240,553.15	6,433,209.03	2,527,888.69	2,013,844.67
September	22,727,740.61	820,434.43	21,907,306.18	15,626,283.11	6,281.023 07	2,233,085.37	1,900,251.83
October	23,212,951.99	801,243.43	22,431,708.56	16,408,030.46	6,023,678.10	2,452,428.66	1,803,052.62
November	23.303.782.34	746,980.08	22,556,744.26	16,407,354.48	6,149,389.78	1,995,895.38	1,742,462.86
December	23,862.966 20	‖775,000.00	23,087,966.26	16.496,380.40	6,234,291.37	2,255,252.50	1,696,068.64
1882—January	24,243,382.26	762,111.53	23,481,270.73	17.788,245.97	5,693,024.76	1,984,325.23	1,547,945.23
February	24,704,933.81	‖765,000.00	23,939,933.81	18,541,340.52	5,831.402.36	2,062.742.98	1,601.191.43
March	25,663,298.81	887,210.88	24,776,087.93	19,039,760 73	5,736,327.20	2,305,538.30	1,453,354.46

‖ Estimated.

A YOUNG man, a citizen of Bradford, was presented on last Christmas-day with a purse, containing $18,000, by his mother, who is possessed of considerable wealth. The young man returned from New-York about the middle of March, after a couple of months' visit, without a ten-dollar bill, either in his pocket or the bank. He had been engaged in making it hot for the "boys" of Gotham.

GAS fitters have recently made a most useful application of photography. They photograph the gas flames given by different burners or jets, so that a customer can see if the shape and form of a light will suit him before he gives his order. As the flames are moreover depicted "life size," the purchaser can always tell whether his jet is up to the standard.

SHIPMENTS.

Shipment of Crude and Refined, in Barrels of 42 Gallons each, reduced to Crude Equivalent out of the Producing Regions in the years named:

Year.	January.	February.	March.	April.	May.	June.	July.	August.	September.	October.	November.	December.	Totals.
1859											500	1,200	1,700
1860	900	1,200	2,500	4,640	11,000	21,000	58,500	64,300	79,000	78,400	63,400	38,400	423,240
1861	54,800	49,620	68,410	95,300	184,000	189,000	200,400	210,000	263,000	184,000	76,321	75,282	1,650,133
1862	98,212	93,101	103,762	201,430	256,320	385,211	375,440	376,311	401,210	406,500	213,611	190,463	3,141,521
1863	171,132	104,928	148,388	288,994	456,211	428,282	213,413	281,400	398,211	264,441	281,340	206,211	3,242,951
1864	148,324	101,431	96,486	132,486	125,218	221,386	110,490	101,218	228,430	220,386	201,441	154,765	1,842,001
1865	121,386	94,803	103,201	122,222	140,301	338,403	184,231	115,821	231,402	228,321	215,262	204,779	2,100,132
1866	132,200	121,320	180,206	260,231	280,320	390,260	200,410	290,210	390,431	318,616	210,016	236,701	3,010,921
1867	123,460	115,321	165,230	250,830	300,210	360,311	210,410	260,310	384,206	300,102	280,013	132,807	2,883,210
1868	150,220	144,201	200,410	280,430	310,408	400,046	390,402	320,210	480,306	260,240	280,260	265,377	3,482,510
1869	200,026	160,320	240,210	260,406	340,318	400,601	310,260	250,214	450,200	480,860	280,210	249,896	3,623,521
1870	360,933	312,910	354,400	390,003	407,908	418,516	410,707	516,679	542,217	557,624	519,780	444,254	5,235,931
1871	437,691	347,718	383,890	389,147	587,375	501,754	541,137	528,134	551,075	505,071	480,977	410,822	5,664,791
1872	476,966	407,606	276,220	428,512	510,417	529,228	591,238	621,954	541,607	607,468	477,940	430,786	5,899,942
1873	573,124	527,440	668,374	708,191	768,176	696,414	814,449	864,768	952,955	1,010,852	959,589	955,443	9,499,775
1874	843,663	501,220	518,246	803,409	899,027	815,413	940,281	793,865	1,014,570	543,341	546,117	602,348	8,821,500
1875	435,095	327,776	693,918	729,581	681,679	745,986	904,537	882,089	1,109,392	871,917	671,066	871,902	8,924,938
1876	677,289	519,193	623,762	603,037	646,150	921,862	1,228,530	1,203,402	1,154,549	524,190	871,496	1,190,983	10,164,443
1877	743,461	484,904	913,919	903,526	1,234,324	1,391,124	1,096,951	1,425,943	1,563,797	1,268,971	1,205,634	600,019	12,832,578
1878	775,791	774,234	741,512	846,636	960,894	1,135,119	1,330,454	1,655,651	1,434,225	1,747,390	1,281,410	992,688	13,476,000
1879	663,998	702,729	973,879	1,136,188	1,331,469	1,369,314	1,625,035	1,808,238	1,627,120	1,662,269	1,453,645	1,542,585	15,896,469
1880	1,650,409	1,395,151	1,613,371	842,268	1,095,259	975,083	1,231,611	1,304,129	1,252,635	1,665,933	1,226,030	1,335,613	15,587,447
1881	1,061,617	915,028	1,276,740	1,348,398	1,563,436	1,729,697	1,925,532	2,214,877	2,031,950	2,080,467	2,069,641	2,014,655	20,232,038
1882	1,817,973	1,829,779	1,729,237										

WELLS COMPLETED.

TOTAL NUMBER WELLS COMPLETED EACH MONTH IN THE YEARS NAMED.

A. D.	Jan.	Feb.	March.	April.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.	Total.
1870	131	131	114	135	164	182	161	156	135	144	112	79	1,644
1871	98	68	70	81	95	150	139	116	125	186	161	181	1,472
1872	48	118	98	122	130	98	131	117	96	101	41	101	1,201
1873	100	105	105	110	106	180	112	116	116	111	108	95	1,361
1874	108	111	108	110	112	113	124	102	108	117	112	116	1,341
1875	184	186	194	180	169	194	208	206	208	215	213	228	2,385
1876	235	236	248	207	200	258	243	274	223	270	278	271	2,945
1877	275	249	296	264	336	598	314	254	332	460	398	391	2,962
1878	279	238	202	411	468	278	210	180	176	232	241	160	3,075
1879	144	136	221	263	395	336	335	280	269	229	225	268	3,101
1880	311	238	358	494	435	315	339	359	359	360	334	309	4,211
1881	232	218	201	310	412	371	348	335	314	302	347	405	3,795
1882	357	359	389										

The Canadian Oil Field produces 35,000 barrels of oil a week, which, divided by 7, shows a daily average of 5,000 barrels. The largest well in the region is rated at 40 barrels a day, but the average daily production of each well is only a trifle over one barrel, as there are nearly 5,000 producing wells.

Wanted — A piece of oil territory over in Germany upon which to drill a well. Anybody having knowledge of such a thing will confer a favor upon the Age by forwarding the information at once.

TABLE SHOWING TOTAL PRODUCTION OF CRUDE PETROLEUM IN PENNSYLVANIA AND NEW-YORK OIL FIELDS, AND CONSUMPTION.

From 1859 to 1881, Inclusive.

Year.	Oil Creek Division. Bbls.	Pithole District Bbls.	Tid'ute and Fagundas District Bbls.	Central All'g'ny Divis'n. Bbls.	Butler, Armstr'g & Lower Allegany Bbls.	Clarion Division Bbls.	Bradford Division Bbls.	Bullion District Bbls.	Warr'n Div. Bbls.	Beaver Div. Bbls.	Alleg. Co., N. Y., Div. Bbls.	Yearly Total. All Districts. Bbls.	Consumption. Bbls.	Yearly Average Price.
1859	2000	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	2000	500	20.00
1860	500000	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	500000	300500	9.60
1861	2113609	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	2113609	1280000	.49
1862	3056690	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	3056690	1472000	1.05
1863	2611309	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	2611309	1992800	3.15
1864	2216109	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	216109	1946620	9.87½
1865	1585200	912500	20500	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	2518200	2238610	6.59
1866	2302700	1095000	490000	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	3887700	2574401	3.74
1867	2393300	814000	839900	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	4047200	2960561	2.41
1868	2672617	445500	729000	26000	. . .	. . .	. . .	. . .	. . .	. . .	. . .	3873117	3404645	3.62½
1869	3462500	365000	535000	22500	45000	. . .	. . .	. . .	. . .	. . .	. . .	4430000	3716341	5.63¾
1870	2745528	173585	723838	713150	918644	. . .	. . .	. . .	. . .	. . .	. . .	5274745	4562642	3.89
1871	2040263	182054	697887	1083386	1091458	310293	. . .	. . .	. . .	. . .	. . .	5405341	5178038	4.34
1872	1429685	145065	847199	881140	2658080	829079	. . .	. . .	. . .	. . .	. . .	6790248	5954742	3.64
1873	1094389	119864	895983	851934	4402563	2526231	. . .	. . .	. . .	. . .	. . .	9890964	7847953	1.83
1874	734247	55770	373325	564978	5160265	3921267	. . .	. . .	. . .	. . .	. . .	10809852	7875145	1.17
1875	504639	35130	351407	343905	4712702	2821214	18509	. . .	. . .	. . .	. . .	8787506	9256416	1.35
1876	611884	37450	354284	333640	4755623	2377700	382768	64220	51337	. . .	. . .	8968906	10414877	2.56¼
1877	734858	60380	312700	474262	5431072	3021120	1465451	1306342	151371	62085	. . .	13019641	11977107	2.42
1878	686948	60000	308780	363710	4552815	2276408	6482400	505265	108300	92490	. . .	15437116	13783672	1.19
1879	389400	36500	227900	258652	2876787	1438342	14268945	289591	45550	82100	. . .	19913767	16851222	.85⅞
1880	335342	36500	168542	166143	1737969	868984	22343202	146672	91655	102956	. . .	25997965	18228905	.94½
1881	293504	31938	146474	145374	1394706	844442	22817975	128338	438000	102956	607106	26950813	21263740	.85¾
	34516721	4706236	7022719	6228774	38737684	21235080	67779250	2440428	886213	442587	607106	186502798	155081437	3.92¼

RECAPITULATION.

Production by Fields.—1859 to 1881, Inclusive.

Oil Creek Division, including Shamburg, Pleasantville and Enterprise,	34,516,721	Clarion County,	21,235,080
Pithole Division, including Henderson, Morey and Ball Farms,	4,706,236	Bradford Division, including Elk County,	67,779,250
Central Allegany, including Scrubgrass and West Hickory,	6,228,774	Bullion Field,	2,440,428
Butler and Armstrong Counties, Lower Allegany Division,	38,737,684	Warren, Stoneham and Clarendon,	886,213
Tideoute Division, including Economite, Henderson, Farms, etc.,	7,022,719	Beaver (Smith's Ferry) Division,	442,587
		Allegany Division,	607,106
		Total all Divisions, Production,	186,502,798
		Total Consumption,	155,181,437
		Difference,	31,421,361

This difference includes, of course, all available stocks on hand, all sediment and worthless surplus, and the amount estimated for shrinkage, which would reduce the available stocks to the figure given elsewhere.

This table is made to show the amount of oil saved and used. It differs but little with the first production table published in the AGE, and was compiled by a producer who possesses valuable records.

Area of Developed Territory.

Venango County, Pa	25,600 acres.	Clarion County, Pa.	19,200 acres.
Crawford County, Pa.	6,400 "	Butler County, Pa.	28,000 "
Forest County, Pa.	1,920 "	McKean and Cattaraugus	63,800 "
Warren County, Pa.	9,500 "	Allegany	18,360 "
Armstrong County, Pa.	5,120 "		
Total			177,900 acres.

This covers all territory productive, whether light or small, as yet discovered in the States of Pennsylvania and New-York.

J. B. MCEDWAINE & Co., not to be outdone by any of the first-class hardware firms, have recently completed a new warehouse, in Bolivar, N. Y. They now have three stores, one at Duke Center, Pa., one at Richburg, N. Y., and the recent building at Bolivar, N. Y. They handle first-class specialties, in addition to a general supply of oil-well hardware, and are considered agreeable gentlemen to do business with.

FROM the *Scientific American* we learn that an improved rock-drilling machine has been patented by Mr. August Pirch, of Denver, Col. The object of this invention is to combine a number of drills in such manner that they can be operated singly, or two or more, so that a hole may be drilled of any size desired and according to the nature of the material operated upon.

PRODUCTION TABLE.

SHOWING THE TOTAL DAILY YIELD OF THE PENNSYLVANIA OIL FIELD FROM SEPTEMBER, 1859, TO APRIL, 1882, IN BARRELS OF 42 GALLONS EACH.

Years.	Jan.	Feb.	Mar.	April.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.	Totals.
1859	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	10	15	18	28	2,173
1860	30	50	89	215	500	1,000	2,000	2,500	3,000	3,500	2,000	3,000	547,439
1861	3,201	4,041	4,800	5,400	6,000	6,100	7,100	8,500	7,000	5,150	5,514	6,716	2,119,045
1862	6,000	5,300	7,400	8,000	9,400	9,000	8,500	11,000	13,000	10,565	8,053	7,238	3,153,183
1863	6,200	6,400	7,000	5,500	6,000	7,603	7,022	8,100	9,200	7,120	9,500	10,260	2,667,543
1864	8,100	6,300	4,500	5,000	7,000	5,100	5,600	5,700	7,180	5,545	10,100	10,320	2,215,150
1865	5,900	5,800	5,000	7,500	8,000	8,000	7,400	6,350	6,400	6,800	7,600	9,350	2,560,200
1866	9,200	9,100	5,000	7,100	8,100	9,500	9,350	9,440	12,000	10,400	11,000	11,165	3,385,105
1867	10,900	8,100	9,000	10,100	10,500	9,000	10,100	10,000	10,100	7,660	9,155	8,313	3,458,113
1868	8,200	9,400	8,100	9,300	11,000	12,400	13,000	11,800	10,250	8,225	7,580	7,150	3,540,670
1869	8,100	8,500	10,000	11,000	13,000	13,000	13,560	13,000	13,500	12,500	11,200	10,625	4,186,475
1870	11,348	11,802	11,509	12,400	15,990	13,400	13,800	15,950	18,203	18,000	17,061	15,990	5,308,046
1871	13,500	13,300	13,082	12,950	13,054	13,882	14,900	15,866	15,555	15,889	15,599	15,841	5,278,072
1872	17,943	17,894	15,680	16,221	17,402	12,140	16,933	17,440	16,598	18,450	25,942	20,630	6,505,774
1873	20,550	21,460	21,830	22,260	24,632	26,361	23,406	30,900	32,500	31,343	33,584	34,680	9.849,508
1874	32,800	30,940	29,760	28,104	29,442	31,222	33,987	32,000	29,461	29,944	29,231	28,101	11,102,114
1875	27,900	26,509	26,012	23,009	23,000	23,805	24,991	23,940	23,800	23,900	23,821	23,594	8,948,749
1876	23,102	25,440	23,560	23,800	24,628	24,400	24,890	25,300	25,900	26,400	26,500	25,900	9,142,940
1877	26,930	27,560	28,860	32,060	36,000	37,440	39,210	42,100	41,321	41,200	39,900	40,120	13,230,330
1878	39,200	39,900	39,200	40,100	41,111	40,820	41,200	42,900	43,999	44,480	45,200	43,900	15,272,491
1879	44,000	43,830	47,960	50,810	52,911	55,600	56,911	59,940	61,498	60,980	58,750	58,231	19,835,903
1880	59,982	63,890	66,215	68,063	72,080	73,104	73,794	74,980	71,941	77,491	76,112	74,080	26,086,692
1881	73,030	69,060	73,900	75,245	79,000	82,460	81,900	79,100	78,231	77,971	77,892	76,642	28,136,353
1882	75,028	74,910	74,751	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .

Total twenty-three years to December 31st, 1881, ... 186,532,067

THE EXPORT TRADE.

CONTRARY to the expectations of a large element of the trade, the demand for exports continued during the first quarter of 1882 far beyond that of 1881, over 30,000,000 gallons of an excess having been taken. It seems, as heretofore intimated, that China and the Indies have opened the throttle, and the call is extremely *loud*.

In order to furnish AGE readers with proof of this, we instance a comparison of exports to a number of foreign ports in 1882 with those of the year previous.

To	1882, gals.	1881, gals.
Africa,	775,800	495,500
Algiers,	82,000	
British East Indies,	5,830,780	1,274,000
Canary Islands,	38,250	
Central America,	47,759	23,397
Chili,	201,000	27,000
China,	5,237,350	1,817,130
Denmark,	1,689,370	434,690
Dutch East Indies,	5,206 280	2,903,370
Eucador,	22,000	5,000
England,	12,220,000	9,500,000
Egypt,	1,000,000	500,000
France,	112,225	59.180
Germany,	20,200,000	12,800,000
Japan,	1,540,000	1,150,000
Malta,	125,000	
Phillipine Islands,	165,000	

Eighteen or twenty other ports took a trifle more in the same period of 1881 than this year. These are in part: The Argentine Republic, Australia, Belgium, Brazil, British West Indies, Cuba, Danish West Indies, Dutch West Indies, Greece, Italy, Netherlands, Norway and Sweden, Portugal, Spain and Turkey. Judging from the charters and loading, the next quarter will show a balance on the other side in all of these. So it is safe to conclude that the ratio of increase of consumption of our great product abroad will be even greater this than last year. This, as stated last month, will bring the demand to something over 71,000 barrels per diem of crude. Mr. Joseph Nimo, Jr., Chief of Bureau of Statistics at Washington, reports the exports of petroleum for the eight months ended February 28, as follows:

	1882.	1881.
Crude,	29,429,839	28,823,072
Naphtha,	15,526,390	12,708,861
Illuminating,	322,844,674	194,438,214
Lubricating,	3,390,537	2,853,040
Residuum,	4,486,442	1,714,188
Total Gallons,	373,672,882	240,537,375
Value,	$34,453,551	$25,363,391

For the first three months of the present year it occupies this position:

From	1882, galls.	1881, galls.
Boston,	1,728,593	2,131,594
Philadelphia,	12,921,982	8,384,815
Baltimore.	2,151,515	2,718,919
Richmond,	151,982	
Total galls.	16.954,072	13.235,328
New-York,	79,701,870	60,343,273
Total Exports from United States,	96,655,942	73,578,601

This is certainly a most healthy showing, and

points in but one direction; that the production must be fully maintained at its present rate, or largely increased in the future, or the world will run short of petroleum supplies.

RUNS, DELIVERIES, STOCKS.

TABLE showing the February and March Pipe Line Runs and shipments, with stocks, on March 31st, 1882—official.

District.	Receipts, Pipe.	Barrels, Feb. 28.	Barrels, Mch. 31.
Bradford	United		
Tidioute & Titus'e,	"		
Lower Country	"		
Warren	"		
Monongahela	"		
Total	"	2,062,742.98	2,305,538.30
Bradford	Tidewater	231,162.94	236,854.44
Warren	Union Oil Co.	32,843.01	40,567.66
Titusville	Octave Oil Co.	5,005.48	4,850.56
Oil City	Charley Run	553.23	455.60
Shaffer	Shaffer Run	845.00	717.00
Franklin	Franklin Pipe	6,134.78	6,490.25
Total all Lines		2,339,327.42	2,595,473.81
Average per day March			83,724.96
Average per day, February			83,547.40
Average per day January			71,855.35

Deliveries.

District.	Pipe.	Barrels.	Barrels.
All Points	United	1,601,191.43	1,453,354.46
Warren	Union Oil Co.	19,223.31	19,381.53
Titusville	Octave	4,000.00	4,537.31
Franklin	Franklin Pipe	3,437.34	3,909.11
Shaffer	Shaffer Run		552.60
Oil City	Charley Run	92.45	366.65
Bradford	Tidewater	159,669.16	218,055.37
Total deliveries		1,787,613.69	1,700,157.03
Total Runs		2,339,327.42	2,595,473.81
Am't of Runs in excess Shipment,		551,711.73	895,216.78

District.	Pipe.	*Net Stocks Feb. 28.* Barrels.	*Net Stocks Mch. 31.* Barrels.
Oil City	Charley Run	3,264.67	3,352.50
Bradford	Tidewater	2,332,663.87	2,312,263.10
All Districts	United	23,939,993.81	24,776,087.93
Shaffer	Shaffer Run	26,008.83	26,274.96
Warren	Union Oil Co.	95,132.28	115,141.84
Titusville	Octave Oil Co	8,986.61	8,881.17
Franklin	Franklin Pipe	8,224,29	10,805.43
Total March			27,252,806.93
Total February			26,414,274.36
Total January			25,788,071.79
Increase March			838,532.57
Average increase per day March			27,049.44
Average increase per day February,			22,364.00
Average increase per day Jauary,			12,174.73

The large runs for March are partly accounted for by the erection of three iron tanks in the Allegany field, which were all filled in a week with stocks from wells. There is one thing, however, that we have not ascertained, as it was not discovered until time to close these tables; that is, an apparent discrepancy of 926 barrels per day in the pipe line runs, as compared with February. For instance, the Bradford runs for February by the United and Tidewater Lines were 72,825 barrels, and the total of both lines from all sections were 81,853 per day. Now, in March the average was only 65,758 in Bradford, and yet the total figures up 81,186, or within 667 barrels of the amount for February. The question arises, where did the oil come from that made up this difference? After allowing an increase in the Allegany field of 5,474 barrels per day, in the runs for March over February, there is yet 926 barrels a day of an increase. It is to be presumed these figures can be accounted for by the Lines.

THE ALLEGANY FIELD.

TABLE SHOWING THE PROGRESS OF DEVELOPMENTS AND PRODUCTION OF THE ALLEGANY (N. Y.) FIELD.

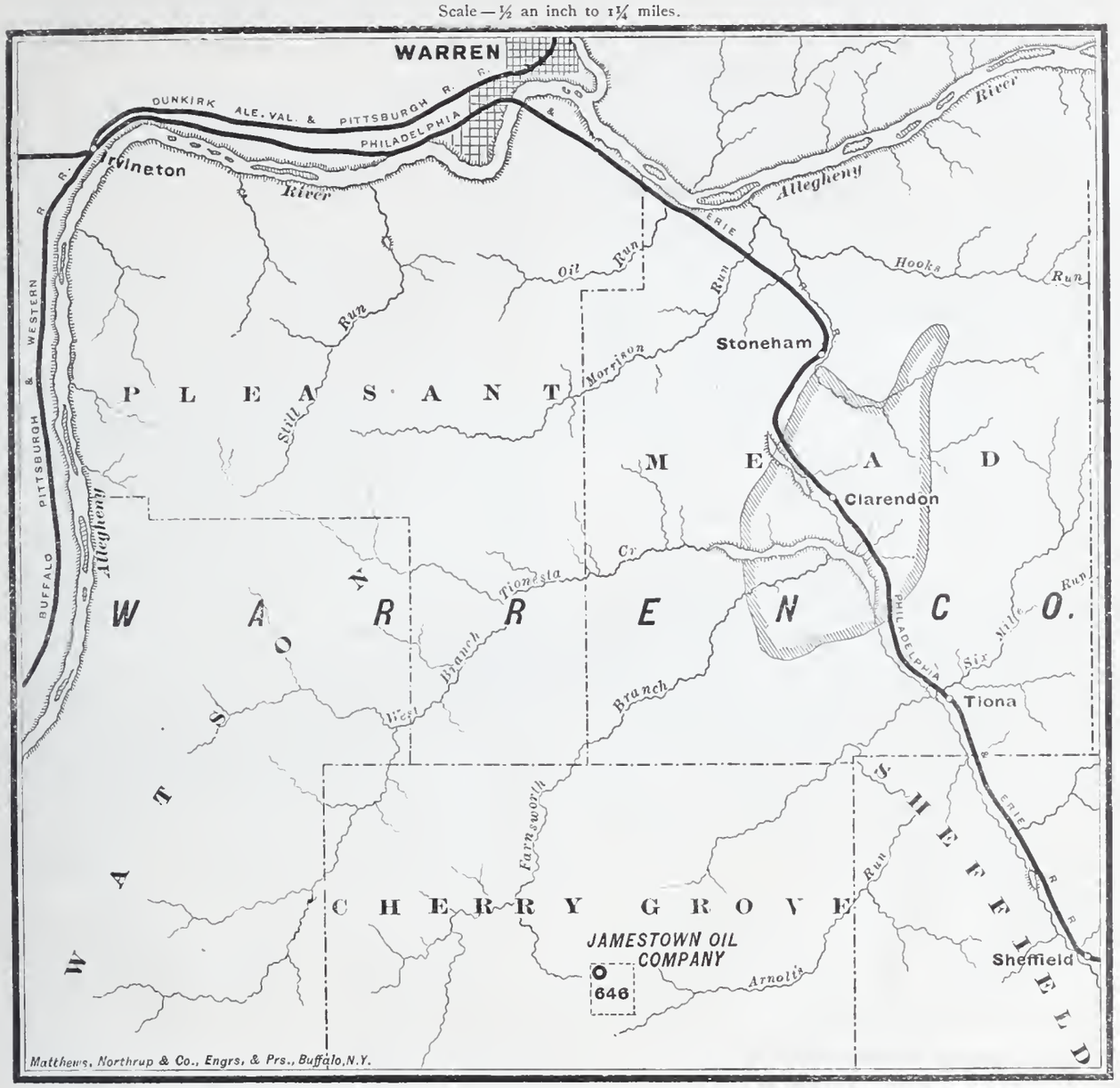
Month.	No. of wells completed.	Dry.	Production. Bbls.	Average per well.	Daily Production of Field. Bbls.	Drilling.	Rigs.	Stocks in wooden tanks. Bbls.	Stocks in Iron tanks. Bbls.
Total, 1880	8	42	76	9½	76	4	6	. . .	. . .
Jan'y, '81,	4	2	18	9	94	4	5	. . .	. . .
February	4	1	24	6	112	4	8	. . .	. . .
March	5	2	60	12	162	4	7	. . .	. . .
April	3	1	20	10	170	5	6	. . .	. . .
May	4	1	48	12	212	20	21	. . .	. . .
June	14	8	130	9¼	327	24	35	. . .	. . .
July	22	5	275	12½	588	47	57	. . .	. . .
August	53	17	586	11	1080	62	68	. . .	. . .
September	63	11	910	14½	1740	105	118	. . .	. . .
October	96	5	1432	15	2896	164	198	38000	108891
November	154	10	2732	17½	5180	155	200	84666	142216
December	196	2	5115	26 1/10	8937	187	204	180200	169250
Jan. 31, '82,	162	2	3914	24 1/6	11123	191	209	270860	243147
Feb. 28th	189	4	4154	21.97	13200	212	201	373460	258247
March 31st	216	2	5580	25.83	16000	215	221	374490	359347

The daily average production for March was as near 15,000 barrels as possible. The pipe runs averaged 14,990 per day, or total of 464,690
To this we may add increase in wood tanks of 1,000
Making a Total of, ... 465,690
Average production per day March, ... 15,022

Since the first instant the daily yield has not been increased much, if any. The average for March being 15,022, shows an increase over February of about 1,800 barrels a day. On the first day of April, therefore, the daily yield of the field should be about 16,000 barrels at the very highest. These figures are not given by guess. They are actual gauges for the month. The stocks in wooden tanks were only slightly increased during March. The field continues to exhibit remarkable activity, there being about the same number of wells drilling that there was a month ago, but the rigs are increased. The field as shown by THE AGE map of March has not been materially changed.

"AGE" MAP OF A PORTION OF THE WARREN OIL DISTRICT.

Scale—½ an inch to 1¼ miles.



REMARKS.

THE above map shows the exact position of the great mystery known as "646." It is located on the lot or square bearing that number. The township is divided into squares or lots. These lots are a little over half a mile in extent either way. They are generally supposed to contain 160 acres of land, but, as a rule, they overrun this amount somewhat. The time having been rather short from the striking of the new well in which to obtain the necessary points and data of the field, the map is not all that we had intended to make it. We had calculated it for some future time. It will, nevertheless, serve a good purpose at this time, when all eyes are apparently turned in that direction.

It will be seen that the well occupies a rather peculiar position. In the first place, its producing capacity cannot just now be stated, but enough is known to grant it the credit of being a fair well. A little over a mile to the southeast of this venture we find a dry hole, which was drilled something over one year ago. It is located on lot 668, and was drilled 2,004 feet deep. About four miles, or a trifle less, to the northeast, though the bearing is east of N. E., is the location, on lot 568, of the corner gasser. Then directly northeast from "646," on the course to Clarendon, the small wells of Roth & Crowell and Hoffman are encountered. The Roth & Crowell is situated at the northwest corner of lot 560, in the lower point of the Clarendon pool, and the Hoffman wells are east of this half a mile. These wells are extremely light, the former yielding about three barrels and the latter even less. As they are producing, however, from the regular oil-bearing conglomerate of Clarendon, it is but natural to suppose that better wells may be found in the section surrounding. The advance developments southwestward from the rich Clarendon pool are not of an encouraging nature, but they include a large area, and, judging from characteristics developed in the Clarendon section, it does not require an extensive

belt, diametrically considered, to include all that may be considered "fat."

About seven miles in a southeasterly course from "646" is found the location of the Magee & Horton development, below the ancient Village of Barnsville. With this section the trade is tolerably well acquainted.

About nine miles on a 45°-line from northwest to southeast, from "646," the Darling and Blue Jay Wells are located. These are in Forest County, about a mile and a quarter south of the dividing line. Aside from these, the new well "646" stands alone in a wilderness some distance from home. Around it some fresh wells are already started. It is not probable, however, that operations will progress at a Richburg rate until the character of the territory is more fully developed, if ever.

It will be observed further that there is a ring surrounding the Clarendon planet. The line indicates all those portions of the development supposed to contain oil. The richer portions can be marked by an inner circle, covering less than one-half the pool. On the east side the section is surrounded by very small wells and dry holes, on lots 80, 77 and 76, which are found along that border. Stone Hill is found at the northern extremity, with a dry hole at the point. On the west, near letter E, in Mead Township, the territory is distinguished by three dusters. The largest well in the field is located on lot 528, on the Cornen tract, near the centre of the pool, south of Clarendon.

Altogether, the field begins to look up somewhat, and during the early months of summer some interesting developments will doubtless occur. As the nature of the field is much more treacherous, however, than either Bradford or Allegany, it is but just to presume that the drill will not be exercised to the extent that it has been in those districts.

CONGLOMERATE.

NITRO-Glycerine has thirteen times the explosive power of gunpowder.

A FIRE at the Standard refinery at Sharpsburg, Pa., last week, destroyed over $100,000 worth of property.

A RURALITE reports the erection of an 800-barrel tank at the Torry & Elliot Well in Alma. What for?

THE test well in Washington County recently drilled, is a very poor specimen of an oil well. The owners now assert that if they can obtain 10,000 acres more, they think they can find oil. Give them the whole county.

THE AGE map of the Allegany field contained in the March number was considered to be the finest ever issued. It was not only fine, but it was so accurately drawn that nobody seemed willing to dispute it. Mr. J. A. Seymour, civil engineer, has our thanks for services rendered in the drawing.

THE AGE is now sold in every State in the Union, even to Utah. Advertisers may justly feel proud of the privilege of speaking through its columns.

JOHN A. CONTANT died at his home in Titusville last week of Bright's disease. He was well known to all early operators, and was a gentleman of good principles.

"MUSOLIUM" is the name or trade-mark used by the Bear Creek Refining Co., for their new product of illuminating oil. A huge black bear is painted on the barrel brand, who looks as though he was monarch of all he surveyed.

MR. FRANK METCALF died at Minneapolis during the latter part of March. Mr. Metcalf was for many years a valued citizen of the Oil Country, and departed with a fair fortune only a few months since. His disease was consumption.

EMERY & Co. (limited), of Pittsburg, Pa., make a specialty of lubricating oils. They have a very large trade extending to the territories and California. They are re-building their warehouse, burned down a short time ago, and will have enlarged facilities for handling their growing business.

CARROLL Bro.'s new store at Richburg will be a convenient structure, and one which the increasing business of this enterprising firm demand. The Ball Engine is well represented in the Allegany field by this firm, who also handle the new and excellent tubing, casing, and pipe, made by the American Tube and Iron Co.

THE new railroad line shortly to be opened between the upper and lower oil country will be a great saving, as it will shorten the schedule time about one hour between Bradford and Oil City, reducing the distance thirty miles. One change of cars only will be made, and that will be at Kinzua. The new route will be opened to the public in a few days.

THE season when lightning destroys oil tanks is now upon us, and the fear of a terrible conflagration, or irreparable destruction of oil, is heightened with every flash of lightning. Newhall's Electrical conductor is, without doubt, the most reliable invention ever introduced to the trade. Newhall & Casey are ready to answer all questions about materials, cost, construction, and will cheerfully make prompt replies. Address them at Bradford, Pa.

THE PETROLEUM AGE.

VOL. I. BRADFORD, PA., MAY, 1882. No. 6.

PETROLEUM.

CHAPTER VI.

From January to July of 1865—The Pithole Excitement—Large Transactions in Lands—Oil Operations on Pithole Creek and Other Places—The Rush of People to the New Oildorado—Railroads, etc.

THE year 1865 dawned upon Oildom with promise of great success to producers of petroleum. Had there existed a prophet, however, who had dared to portray the wondrous changes that were to be wrought during the year, he would probably have been incarcerated in some dungeon as the very craziest lunatic afloat. The excitement at Plummer, and along Cherry Run and portions of Oil Creek was bad enough, but when compared with what followed the striking of the United States Well on the Holmden Flats Pithole, it would appear as a simple summer breeze to the most violent hurricane that ever traversed, in its pathway of death and demolition, any of the great western territories. The area over which oil men had wandered during the previous year, in search of oil territory, was very large. In fact, all those sections known in after years as belonging properly to the "Oil Regions" and other sections outlying, were examined and sought after by the pursuers of petroleum wealth. In many cases wells were drilled, but either through a want of a thorough knowledge of the necessary treatment of wells, or because the wells were not drilled to a sufficient depth, but few were successful. At Tidioute operations were becoming quite active, and every stream that emptied itself into the bosom of the Allegheny River was selected as a proper channel for the conduct of the stores of petroleum that were supposed to exist beneath its surface. Wells were started in all directions from the little town. Those, however, which proved successful were confined to a very narrow compass, extending westwardly from the village, or more especially from the Economite development, which seemed afterward to terminate the producing belt at the East. This led the way up Dennis Run, which is a small stream with a very limited bottom land, and receives its waters from the hills near Triumph, two miles west of Tidioute. Gordon Run lies north of Dennis, with a high ridge dividing. The latter, so far as surface indications were concerned, exhibited more satisfactory evidences of the existence of oil than the former, and was the first to receive a proper test. Some oil was found in each of three wells sunk at regular intervals along its course, but in no case did it appear in quantity sufficient to warrant the outlay necessitated by a proper test. What was true of Gordon Run was also true of MaGee, north and east of the village, and of the banks of the Allegheny River south. All these received attention before Dennis Run, and, as a consequence, the development of the latter was delayed until the fall of the year of which we write, 1865.

In the region of country lying between Pithole, Pleasantville, Titusville and Neiltown, and as far east as Tionesta, on the Allegheny River, innumerable wells were drilled during this year. Pleasantville is situated about five miles east of Titusville, and Neiltown is about the same distance northeast of Pleasantville. Many of the ventures, however, had been started some time prior to the striking of the United States Well, and hopes in each case that another Pithole would be discovered inspired the proprietors to pursue the course marked out, until the end was reached, and the result fully known. Along many of the tributaries of Oil Creek the same state of affairs existed, and not without some satisfactory results. Pioneer during the summer of this year sprung into existence, and following this came the rich developments of Bull Run, Cow Run, Calf Run, and numerous other domestic runs, which gave Oil Creek a second boom almost equal to its first. Looking southward from this point over Cherry Tree Run, and other valleys and hills to Cochranton and French Creek, which joins the Allegheny at Franklin, here and there could be seen the elegant form of the attractive and interesting oil derrick. The song of the humorous and cheerful driller often reëchoed among many of the hills and valleys of old Venango. Something of an inspiring character seemed to possess the very air that the carpet-baggers breathed in this country. Those who had come from cities, and more level and pleasant farming communities, were especially interested and bewildered apparently by the scenes which surrounded them on all sides. The world beyond knew but little of what was transpiring in Oildom, or of

the causes which gave rise to the stories of such fabulous proportions that went out through some process to the inhabitants. Perhaps the real character of no other county was as little understood, and no industry of equal proportions so lightly esteemed by those residing at a distance and uninterested, as the Oil Country and its trade. Men of intelligence have come to take a view of the country, expecting to encounter difficulties of a startling nature in trying to make their way over and around great gaping holes in the ground, supposing that oil wells were "dug" or blasted through the rock, and stood, with their mouths wide open, ready to receive and devour every body and everything that happened around that way. (Nearly a quarter of a century has passed and such people may be encountered in many parts of the United States, even at this day.) Therefore, the disappointment expressed or implied by every fresh arrival to the region is quite natural. He never finds anything just as he had pictured it in his mind. A person preparing to visit a foreign country can imagine to a certain extent the appearance of great cities, mammoth cathedrals, and mosques, with domes towering towards heaven, conveying impressions that cannot be transferred to paper. He can picture to himself scenes of grandeur and beauty of architecture which he is about to witness, and come very close in his calculations; but his mental investment of scenes in the Oil Regions proves to be so far from fact, and so full of fancy, that he is terribly disappointed and he will not fail to give expression in the manner indicated. Perhaps this is attributable to a failure on the part of instructors in the public schools to impart proper information regarding the manner of conducting the great mineral industries of the country. But few who have not paid a visit to the Coal Regions have any conception to-day of the manner of removing the mineral from the bowels of the earth, and the children who should be educated in these matters know nothing whatever in relation to it. So, as a rule, all strangers in the Oil Regions feel a kind of disgust with themselves at the thought that they knew so little of the *modus operandi*, or of the magnitude of the business.

The early part of 1865, it should be borne in mind, was a season when the country was full of paper currency. There was apparently more of it than the people wanted, and the spirit of adventure and speculation had settled down on nearly every community of the whole nation. A season of comparative quiet had been enjoyed in the oil country so far as the striking of large flowing wells was concerned, and in this respect the region had lost its great name. On the other hand, the stories regarding the great fortunes daily acquired from investments small and great were constantly spreading throughout the county, and, like all other "stories," they by no means assumed smaller dimensions as they were conducted from mouth to mouth. This had a tendency to direct the steps of every young man, possessed of the spirit of adventure, toward the Pennsylvania oil regions. The United States flowing well on Pithole Creek was the Mecca of all fresh pilgrims. It was developed just in time. The war was brought to a close, and the Oil Regions was a chosen spot to deposit surplus funds, and this well enlarged the scope of territory that seemed to give promise of oil in paying quantity.

On January 15th, 1865, the writer, whose headquarters at that time was Plummer, Venango County, paid the well a visit. It was supposed then to be flowing between 600 and 700 barrels a day. It was stated by the owners afterwards, however, that it increased during the first three months to 1,100 barrels per day. It was situated near the bank of Pithole Creek, and on three sides—north, east and west—extended the beautiful valley of

PITHOLE CREEK.

It was not more than seventy rods wide from north to south, but the land on the north side was not very high, and upon the elevation, which formed a kind of plateau (though it could hardly be termed this, owing to the unevenness of the surface) was afterward erected the great City of Pithole, on the Thomas Holmden Farm. The creek was so named from a huge cavern or pit that existed in the mountain side near its mouth.

The company which sunk the United States Well was organized, in the spring of 1864, by F. W. Jones and J. N. Tappan, of New-York, and James Faulkner and I. N. Frazer, gentlemen having connection with the Humboldt Refinery of Plummer, and others, among whom, it is said, Mr. Sam. Q. Brown, of Pleasantville, figured as a prominent stockholder. Leases were procured on various farms along the creek, among which were those of Thomas and Walter Holmden, Blackmer, Woods, Haworth, McKinney, Tyrrell, Heckert, and Wyck. Several wells were started on these tracts during the summer, resulting in the development that so startled the world. Other wells had been sunk in the vicinity, but none to the proper depth. After passing through

the second sand, found at a depth of about 500 feet, all previous ventures had suspended operations. But the Frazer party, or United States Company, believing in a lower stratum, proceeded another hundred feet, where the enormous deposit was discovered. Weeks rolled away, and but little business was accomplished in the way of erecting or providing accommodations for the hordes of pedestrians who made their way from all parts of the country to see the fresh strike. The Holmden Farm homestead was the only resort for refreshments for either man or beast. Around this from fifty to one hundred and fifty strangers daily congregated, begging at any price for something to change the monotony of "a knawing at their vitals." Snow covered the earth, and a more desolate-looking region no white man ever entered. The two houses which formed the immediate neighborhood were of the rudest kind, and one of them was so ridiculously rude that nobody attempted to enter it but the proprietor and his family. If the accommodations for man were rude, those for the beast were positively primitive enough in appearance to have performed the functions of a livery department for the first man said to have undertaken agricultural pursuits immediately after the completion of all those things called "good" by the Creator. It was quite a common scene to witness a line of hungry-looking wretches formed from the doorway leading from the "sitting-room" to the other apartment, extending clear around the room and sometimes outside, awaiting the call for dinner for the space of an hour or so. The fortunate individual—the man who felt that he had been born under the auspices of some lucky planet—was he who had planted himself against the door and stood as a target for the others to press against. At the proper signal the door was opened and the rush commenced. Small men and boys had no business there. It was not an unfrequent occurrence to witness the trampling of one another and the ripping and tearing of clothes, and all simply to obtain something to eat. The table and the house were often stripped of everything edible, and the place being about eight miles from the nearest source of supply, and a much greater distance from the proper source—Titusville—made it quite difficult to keep a fresh supply on hand; at least it was found by the man of the house to be a difficult matter. It required a couple of days' hard labor for his team to convey a load from Titusville. And so the rush to Pithole began, and never ceased until, as shown hereafter, a great city was fully established.

Drilling at other wells in the neighborhood of the U. S. flower progressed with all the speed possible, which in those days was not very great, it requiring about three months, on an average, to complete a well after commencing to erect the derrick. Lands were bought with some caution for a time, for it seemed that the trade had its serious doubts regarding the lengthy duration of the new well. The rush to erect a town, notwithstanding the condition of things above described, was not enormous, until after the striking of the Grant Well by the U. S. Co., which occurred about the first of June. One month previous to this event the second building was started, and the first, a structure intended for a boarding-house, was about completed. During the spring months there were great floods throughout this portion of the country, and the roads leading to Pithole were about as near bottomless as they could well be. This was one cause for the slow progress made in the building of the city. But after the advent of the Grant Well, which started producing at the rate of 1,500 barrels per day, it seemed that the whole American race had suspended business elsewhere, and proceeded direct to Pithole. In May there were two buildings erected. In August it was estimated that 14,000 souls found shelter within the environs of the Chicago of Oildom, as it was termed. In order to reach a fair conclusion regarding the scenes enacted in a business point of view during the three months following the month of May, one must place before his eyes the most remarkable events he ever witnessed in this relation outside, then draw on his imagination until that has become totally exhausted, and then read the "Arabian Knights." All this would only give him a fair start in the right direction. The flat farms were divided into half-acre leases, and sold at bonuses ranging from $3,000 to $25,000. In many cases lessees, even after paying these enormous figures, realized as high as $50,000 profit from the sale of interests in a single well. Hundreds of these leases were placed "in the market," and, of course, a well was started on each as soon as possible. This, as a rule, had a tendency to hasten the sale of sixteenths, and in many cases these interests were found to have no limit, even in one well. It is stated on pretty good authority that thirty-five sixteenths were sold in one well, and the proprietor still retained a controlling interest. Farmers, merchants, tradesmen of all description, dressmakers, and every other specimen of the human family who paid this region a visit, in-

vested in some species of oil interest as soon as something was found that met with their views, and agreed with the contents of their pocket-books. In some cases transactions ran up into the millions. New-York, Philadelphia, Chicago, St. Louis, and a thousand other cities poured out their surplus store of greenbacks as an offering to the great Pithole goddess. A few cases might be cited without fear of detracting from the intent of this sketch. Prather & Duncan, sometime during the spring months, purchased the land, interest and royalty of the Holmden Farms for $25,000. In July the same parties contracted for its sale to H. E. Picket, George J. Sherman and others for the moderate sum of $1,300,000. The daily production at that time was something over 3,000 barrels per day. The greater part of the city was also thereon located, and already there was an annual rental coming of over $60,000. The first payment of $300,000 was to be made in thirty days from the date of the contract. The second parties to the contract proceeded to negotiate with capitalists of New-York and Chicago, and actually succeeded in disposing of the property at $1,600,000, leaving a profit to themselves of $300,000. About this time the great Ketchum-forgery swindle of New-York was discovered, and as some of the parties who had engaged in this great "Pithole oil scheme" were victims of the Ketchum rascality, they became timid, and the sale fell through. An extension of two weeks' time was obtained, and Chicago called upon for a response. The call was not in vain, as on the last day Mr. Sherman, Joshua Ellis, John G. LaMoyne and Mr. Picket, all of that city, left Titusville, each carrying a package containing $100,000, or $400,000 in all, to make the first payment on the property as agreed upon at the time of receiving the extension of the contract. They arrived in Pithole about dark, but were informed by Prather & Duncan that they were too late—the time had expired, they said, at sunset—and they preferred to retain the property. The fact, however, that the trade was made and the money tendered remained the same. Many other instances of this character might be cited. Dealers and brokers in oil lands and oil interests multiplied by the score. Tents for office purposes were erected on leases among the wells, and here is where the verdant visitor generally got caught in the financial traps; the excitement caused by the presence of hundreds of men moving about in search of something to purchase, together with the apparent hurry and strife of drillers at the wells on all sides, and the roar of flowing wells here and there, was too much for the ordinary man. The very trees, fences and stumps by the highway were made to speak to the passer-by, through painted signs of interests, lands, wells, lots, houses and everything else "for sale." These first greeted the tourist as he began to approach the city from any direction about a mile from its precincts, and by the time he arrived within the city limits and gazed down upon the extraordinary life and activity witnessed, if he had but a ten dollar note, he burned for a place to invest it. This, of course, refers to a stage in the progression of the city after it had assumed those proportions.

During the progress of the construction of the city, moreover, there were many and great fortunes made in the transfer and retransfer of city property. After the striking of the Grant Well a man had but to seize upon the first opportunity offered in securing leasehold city property to realize large gains. Lots were bought to-day for five hundred dollars and sold to-morrow for five and ten thousand. Then, as the work progressed, prices advanced, until in a few instances $25,000 was paid for a building-patch, the site of the old Danforth House, corner of State and Holmden Streets, having actually brought that amount. The city grew with such rapidity that for a season it seemed thoroughly filled with all the wild, reckless adventurers, dishonest tricksters, thugs and bummers that the country afforded. It was Pandemonium, and yet in another sense there was comparative safety in dwelling there. A vigilance committee commanded the forces while the preliminary steps were being taken for the establishment of a borough organization. This was accomplished about the first of September, with Alexander J. Keenan as Burgess, and Leonard H. Church, David Gardner, Frank P. Confer, J. T. Chalfant and Col. L. M. Morton as Councilmen. A police force was at once appointed, after which the government was conducted on "scientific principles."

Meanwhile the business of sinking wells continued, and trading in lands and leases for oil purposes was carried to an enormous altitude. It was not an uncommon occurrence for a man to obtain a refusal of a lease or an interest of some description and dispose of it before he slept, pocketing twenty-five, fifty or seventy-five thousand dollars. It was a season of "refusals;" nearly all trades were made in that way. The applicant for the purchase usually got a strip of paper granting him a certain time to appear at a place designated with a certain amount of money

as payment either in part or as a whole, when the proper deed or contract of transfer would be executed. This system gave such a boom to the scalping business that it became very popular. As a rule, however, the party or parties making investments were nicely fleeced out of the margins thus created. In most cases they knew of the circumstances, but fear of competition prevented them from taking chances on the death of the refusal, and trades were consummated without difficulty. In fact, purchasers were only too glad to have it to say that they had secured an oil interest in Pithole.

The excitement during the early days of Pithole did not seem to interfere with the progress of the drill elsewhere in the country. There were operators not ten miles from the new Eldorado who perhaps never gazed upon its wonders. They knew there was much business being transacted there through daily accounts that were given by others, but they had their own affairs to attend to—their own Pithole to develop—and they gave that attention. Consequently the year 1865 may be put down as a wildcat year. Every farm surrounding Pithole was the scene of active operations as well as the flats. It was wonderful how broad became the ideas of the oil fraternity regarding the extent of producing territory in so short a time. Five days before the striking of the United States Well, in conversation at the centres of business, oil men gave expression to considerable concern regarding the danger of running short of supply. Many of them, of course, had hope of the discovery of new sources, and many others firmly believed that the whole business was "playing out." Pithole, however, changed the aspect. The new well was situated twelve miles from Oil City, thirteen from Titusville, and six from any point on Oil Creek or Cherry Run where oil was produced. It was also five miles from the Allegheny River at Eagle Rock, where also some wells were in progress. The United States Well sealed every stream in north Venango and south Warren County, in the mind of oil men, as choice territory. Any one can therefore fix in his mind a comparative view of affairs at the date named, and thereby judge of the extraordinary excitement that was created by this new strike. The whole Oil Country was waiting for just such an event, and the whole world, apparently, responded to the invitation for investment.

Following the Grant Well, which was struck, as stated above, about the 1st of June, came the Twin Wells, Nos. 1 and 2, owned by Keenan, Kilgore and others, flowing four or five hundred barrels each. From this time forward the spouters came in with considerable regularity. The territory which proved valuable was comprised in a portion of the Holmden, Rooker, Hyner, Copeland, McKinney and Ball Farms. Perhaps 200 acres would cover all that proved of the paying species. This, however, was only discovered after millions of dollars had been squandered in drilling wells on every half acre of ground. Nobody expected a larger lease than this, and nobody expected to obtain one at a less royalty than one-half. This was paid by the original lessee of the Holmden Farm—the United States Petroleum Company. The farm consisted of 160 acres, the royalty of which, with the right of surface and city lots, was purchased by Duncan & Prather, as above related.

We have now reached the middle of June. The production of the county was yet only about 8,000 barrels per day, which was worth between $5.00 and $6.00 a barrel at the wells. All the oil produced at Pithole was hauled to Titusville and Eagle Rock, for shipment by rail and river. Bunting was the principal buyer and shipper at the former, while Fisher Bros., of Oil City, took nearly all that went south by the river route.

This brings us fairly into Pithole excitement. While we attempt to recall circumstances, and place them upon record, we begin to feel our nerves move as when we visited the great metropolis, after an absence of thirty days from June 1st. We left it filling up rapidly with small dwelling houses, and places of shelter for men and their beasts of burden. These were coming there in great numbers, for each and all found all they could do at prices for their labor such as were never previously realized in any locality, not excepting the gold diggings of California. Lumber was in great demand, and to this day it is a source of astonishment where all the material came from so quickly by which the city was erected, besides furnishing the hundreds of wells that were set in motion, on such short notice from the striking of the second well in the latitude. When we returned to the place, after the period named, lo! and behold, a town bustling in the summer sunlight stood where heaps of lumber and piles of brush, old logs and other *débris* were lying around, and "confusion worse confounded" reigned in the locality. The highways were so thoroughly cut up during the spring months that they were still next to impassible. As we approached the city, and on the way

from Titusville, processions of oil teams, consisting of twenty-five, forty, fifty and seventy-five in number, were passed. It seemed remarkable beyond measure. Aside from these, hundreds of men on foot, horseback, in vehicles, together with innumerable wagons containing household effects, upon which sat women and children, were heading all in the same direction—to Pithole. The public roads on the route being impassible, fences were thrown down, and the fields were entered, where stood the owners with a club in one hand, and the other extended for *back-sheesh*. By this process many of them received more money than their farms were worth, and they were still the owners. On arriving there the observer's astonishment grew by no means less. A thousand men seemed to be at work, ripping, sawing, nailing, singing, swearing, laughing and hurrying, apparently, with all speed, in the work of constructing buildings, the walls of which were rising on all sides. Regular streets had been laid out by the purchasers of the Holmden Farms, and hotel sites were among the first to be occupied. Among these, the Chase House, Bonta House, the Danforth, St. Nicholas, and the Morey Farm Hotel, were the most prominent. These buildings cost from $40,000 to $100,000 each, the Chase House having been the most expensive. They were usually furnished in the most elaborate and costly style, and were resorts for the men of fortune and standing. At these places could be witnessed nightly scenes that would astonish men of Gotham, even at the present day, in the matter of risking money on games of chance. The visitor to this remarkable city, about the middle of July or 1st of August, could also witness other scenes of revelry that surpassed any of the kind ever previously heard of or seen. From "free-and-easy" resorts, with other dance-houses, proceeded, soon after sunset, the coarse songs of disgusting and depraved harlots, the boisterous howlings of partially intoxicated and inebriated individuals, in all parts of the city. A theatre was erected by a man named Murphy, and, it is needless to add, the patronage nightly equalled the capacity of the structure. Church accommodations were as yet very crude, and the people seemed to care but little whether they improved or not. Pithole was the Athens where social crime was permitted and exercised without danger of publicity. Many men who had left homes of purity and cast their lots here, soon found themselves transformed to debauchers of the most alarming type. This state of things continued for several months, until it became necessary for the authorities to quietly close down, in a measure, on the dens of infamy, and those who had "fallen from grace" began to repent of their sins. During many of the revelings, knock-downs and shooting affrays were simple changes of monotony. Pithole City was the centre of operations of gangs of outlaws and highwaymen, who, in a few instances, at least, were guilty of murder in the first degree.

While these unpleasant surroundings existed, moreover, there were many other attractions that gave to the place a brilliancy never to be eradicated from the memory of the observer. The city was the great centre to which capitalists and first-class business men had directed their steps. As a consequence, no branch of business in the mercantile line was neglected, or was wanting. The buildings being all new and nicely finished, especially on the sides fronting the street, the display of wares was very fine. The opinion seemed to prevail that the place was destined to an eternal existence. This may be presumed from the fact that the project to construct

RAILROADS

from Oil City had already assumed practical shape. The first to reach Pithole was organized under a charter granted to the Clarion Land & Improvement Company, which was an act authorizing the company to build branch railroads in either of the Counties of Venango, Clarion, Mercer or Elk, the branch not to exceed twenty miles. This road was commenced in August of this year, and the first train of cars entered the city from Oleopolis on December 18th. There was great rejoicing over the event, which was celebrated by every individual of town in his own manner, but in some way. The other was known as the Reno, Oil Creek & Pithole Railroad, which was a conception of C.V. Culver, of Culver, Penn & Co., but was never completed. Doubtless the failure of the firm named, which occurred during the summer of 1865, had something to do with the suspension of operations on the road, and doubtless the building of the road had something to do with the failure of Culver, Penn & Co. So it was an even thing. The grade was made and ties and rails strung all the way to Pithole, but a car never entered the city by that route. It was a wild scheme. The road was constructed along the mountain sides from Reno, and spanned Oil Creek and all ravines and water courses encountered by high trestles. "Crocus," in his history of Pithole, relates the statement of a track hand

on this road, as follows: "Each train is to be provided with surgeons, undertakers, amputating tables and other luxuries. The company will furnish coffins to all who may desire them, free of charge. Hospitals will be established along the route, and in case of fatal accident the bodies of strangers will be immediately embalmed. The arrangements are so perfect, and accidents so sure to occur on this route, that it is supposed many will have their limbs amputated and get embalmed before starting, in order to avoid delay while on the cars." The prophecy of the track man, however, was never fulfilled, as the elevated road never got a chance to dump a train.

PIPE LINES.

During this summer the first successful attempts at transporting oil by pipes were made.

(TO BE CONTINUED.)

DEPARTMENT OF SCIENCE.

CAPT. FRED. NORMAN proposes to cross the ocean in a row-boat, the dimensions of which are 12 feet in length by 4 feet in width. It looks like a *grave* project.

THE Sterling Castle, a new Clyde-built steamer, is said to be the fastest ocean-going steamer in the world. An average taken of six consecutive runs gives the speed of the vessel as 21 3-10 miles per hour.

MR. ALFRED H. NOBLE, of New Milford, Conn., has invented a new belt fastner, which will shortly come into use in the Oil Regions. It is a simple process, suggested by the ordinary "hook and eye," and will save a deal of trouble and time in making belt connections.

MR. ALONZO J. SIMMONS, of Indianapolis, Ind., has recently patented some improvements in steam-actuated valves for steam engines. The invention consists of a valve provided with a piston which receives its steam supply from the cylinder of the engine as the main piston nears the end of its stroke, the main piston acting as a valve for the valve piston.

A NOVEL valve gear for steam engines has been patented by Mr. James O'Donnell, of Central City, Dakota Ter. This invention employs two piston valves, which are rigidly connected and reciprocate simultaneously to alternately open and close the ports leading to the main cylinder of the engine. Contiguous to each valve cylinder is a steam chest containing puppet valves, which are operated to alternately admit steam into the small piston chamber, from which it passes into the main cylinder. The invention is mainly embodied in the mechanism employed to operate the puppet valves.

THE TELEPHONE FOR FINDING SPRINGS OF WATER.—A new use for the micro-telephone has been devised by Count Hugo Von Eugenberg, at Castle Tratzberg, in the Tyrol, namely, for finding underground watercourses. At several different places on the declivity of a hill, he buries a number of microphones in the soil, and connects each of them with a battery and a separate telephone. In the night, when other sources of disturbances are wanting, or less noticeable, he listens at the telephones, and is enabled to detect in this manner, the faintest murmur or gurgling of water within the earth to a considerable depth. The microphone plays the part of the sensitive ear of hunter or savage, who is often able to detect the presence of water in the same way.

A UNIFORM system in chemical nomenclature is proposed. This would be a vast improvement on the system at present in vogue. To the uneducated especially this would prove of great value, as many of the names given to the common articles in use would become familiar and their character, in a measure, more easily understood; very much the same as words of peculiar form and meaning, sometimes used in ordinary English, become familiar and expressive. For instance, in the use of the word salts, use the name of the metal, followed by an adjective representing the acid or negative radical: sodium chloride, potassium sulphate, ferrous sulphate, mercuric chloride. The terminals *ous* and *ic* are to be used only when there are two salts of the same metal, differing only in degree.

MR. L. C. SNELL, of Duke Centre, has patented a contrivance for burning crude oil in stoves. We have not yet seen even a drawing of the implement, but judging from the reports which have reached us of its superior qualities, it must very soon occupy a conspicuous position in the matter of "house-furnishing." It is a circular iron plate, containing a single groove, in which the oil is conducted after being deposited by a pipe leading from a tank or other reservoir at a safe distance. After entering the groove the oil passes around the circle in a slightly descending manner. As soon as it enters the channel it is ignited, and at once heats the iron substance, which naturally intensifies and hastens combustion. Air conduits are arranged so that the proper proportion of oxygen therefrom unites

to enlarge the heating power of the flame. It is claimed by the patentee that he can secure a saving in the heating expense of any house nearly 50 per cent., with oil at $1.00 and coal at its present rate.

THE KINGSHIP OF COTTON.—Whoever controls the cotton goods of the world controls the exchanges of the world. In this sense, "Cotton is king." The great mistake of the Southern people, in thinking that cotton was king, consisted in believing that raw cotton was king. There was a little of truth in their belief, as there is in most wide-spread popular delusions. Whoever controls the cotton cloth is a king, and powerful, though not an unlimited monarch. Very few people want raw cotton, or can do anything with it individually; every one wants cotton cloth, in some form, and every one can individually turn it to his purpose. The Southern people did not see this truth, and therefore never perceived that they were more completely dependent on the *manufacturer* of cotton than almost are the raisers of any other agricultural product whatever upon the consumer of that particular article. Of all the great products of agriculture, cotton in its raw state is one of the least necessity to the individual man. It requires the capital, skill, and mechanic arts to make it available.—*Senator Bayard.*

A SPECIMEN of the baleen, or black whale, was brought to shore from the Bay of New-York, a short time ago, that was a monster. This species was driven from the American Atlantic shore over a hundred years ago by the vigorous manner in which whale fishers pursued the business. It was thought, however, that the whole tribe had been captured, but it is now evident that they were only driven to other and more peaceful waters. This latest example is described by the *Scientific American* as follows:

The tail measures, from tip to tip of flukes, 16 feet, and each fluke is 10 feet in length by 4 feet in width at the median line. This proportion of width of tail to the length of body greatly varies from that of the above cited species. The great size of the tail in the present species and the more slender body and smaller head altogether must credit it with greater activity. The body at the junction of the tail is but 80 inches in circumference, and a most graceful form is seen in the gradual enlargement towards the deepest point near the head.

The whole length is about 46 feet. The baleen plates at the deepest portion of the mouth measure between 6 and 7 feet in length and 7 inches in breadth.

The palate and tongue are of a delicate pinkish color; more deep in tone in the former. The anterior aspect of palate measures, at its greatest width, 16 inches, arching in Gothic figures forward to the outline of the mandible, and suddenly contracting posteriorly to a space of 3 or 4 inches. A deep sulcus extends along the median line.

PETROLEUM SCIENCE AND ITS DIFFICULTIES.—There is perhaps no problem in geological science so difficult to determine satisfactorily as that which pertains to the origin of petroleum. While nearly all who have given the subject sufficient attention, or thought to express an opinion, agree on one point — that it consists of elements resembling those possessed by coal — yet so far as throwing light upon the origin of the causes which served to produce the liquid is concerned, no indisputable conclusion has yet been reached. We are informed by scientists that petroleum is a product belonging to the coal system of minerals. It is argued that, as petroleum can be produced from coal, that they are similar in substance, though differing in form. This has been demonstrated to the satisfaction of all. The difficulty, however, that has not yet been overcome in offering the solution, is to show the unenlightened how to reduce coal from crude petroleum. It is not difficult to understand how the agencies, or constituent parts, of any substance or liquid are traced by proper analysis. Petroleum is known thereby to be a hydro-carbon, composed of two gases. These gases are, of course, primary elements, indestructible and exhaustless in quantity. Hydrogen is a constituent of water, and is, therefore, as inexhaustible as the ocean. The other is a constituent of all vegetable forms, and also of rocks. One hundred pounds of limestone will weigh about sixty pounds, the part driven off by the heat being carbonic acid. Now it is well known that underlying the oil sand-rocks in many places are to be found strata of limestone. A theory is naturally formed from this basis of the origin of petroleum oils. The earth containing, as it does, large stores of water, and being circuited by innumerable courses, the water would naturally descend in the crevices and cavities known to exist in the rocks. The water thus finding its way to the porous sandstones, or drift rocks, and percolating the same, becomes charged with salt, potash, saltpetre, and other chemical ingredients, and finally reaching the lower bed, or limestone strata, becomes de-

composed. The carbon of the rock and the hydrogen of the water unite to form oil, while the oxygen is set free to proceed toward the surface or unite with minerals to form oxydes. The reverse of this process is seen in burning the oil in a lamp. The oxygen in the atmosphere unites with the carbon in the oil, forming water, thus completing the circle and furnishing some proof of the correctness of the theory above advanced. The question would naturally arise from this as to the inexhaustibility of the oil supply, and the answer would necessarily be in the negative form — that it could not be completely exhausted. The process of accumulation must go on forever. The other theory, that petroleum is simply a product resulting from the decomposition of vegetable substances, such as the fern and other ocean plants deposited on the surface of the oil rocks during the primary ages, would in a measure antagonize the above, and lead to the conclusion that oil deposits were as exhaustible as those of any other mineral — that the extent of supply equaled the quantity of original matter deposited, and no more. However, in the study of this subject there are many interesting features. Among these is the great variety of formations in which the oil is found. There is the seamy rock of Oil Creek, the seamy and semi-porous rock of Butler and Clarion Counties, and the thoroughly porous conglomerate of McKean County, Pa., and Cattaraugus and Allegany Counties, N. Y. Each of these possesses characteristics peculiarly its own. In the Oil Creek country it was demonstrated quite satisfactorily that the oil flowed through channels in the rock, of greater or lesser dimensions, from some central repository, and the capacity of wells to produce depended upon their proximity to these seams, crevices or channels so called. Sometimes it seemed as if certain wells, such as the old Maple Shade, the Noble, Sherman and others, had penetrated the great repository itself, from the manner in which they spouted oil for a season. Wells which failed to strike a cavity of some description, as a rule, failed to prove of any value at all. In the lower country—Butler and Armstrong—the sand-rock in which the oil was found was more or less saturated throughout with the product, and the formation was expected to be found somewhat porous, though soft streaks or veins were looked for as the hope of the wells. In the upper country the oil formation is of greater thickness than in either of the other districts named, being from twenty-five to ninety feet as against from fifteen to thirty. Then, in appearance, there is only a slight resemblance, that of the upper country being of a dark color, almost black, interlaid with a stratum, varying from ten to twenty-five feet in thickness, of a clear sand having a reddish cast. In the latter the great body of oil is found. The other portions of the rock only seem to form protection to this rich part, though the sand-pumpings or granulated portions from any part of the entire depth, as a rule, emits a strong oily odor.

In the Tidioute and Warren fields, moreover, there is room for extensive research in the science of their oil formations. That of the former is the most perfect specimen of sand formation known to the petroleum age. It varies in thickness from twenty-five feet on the outer edges to one hundred feet near the centre, and was found to contain more or less oil at nearly all depths. It was, nevertheless, inclined to be of a seamy character. In the latter, or Warren district, there are no fewer than four distinct and separate oil formations, and all occupying independent positions as regards tide level. The first is that of the North Warren section, which belongs to the Shale Group; the next is that of Clarendon, which comes in the regular order of white sandstone, and found at 1,065 feet, 325 feet above tide; the third possesses characteristics similar to those of the second, but is more inclined to be coarse and pebbly, especially near its surface, and is found 180 feet above tide. This species furnishes gas in great quantity in the neighborhood of Sheffield and other parts of the county. It was discovered by C. A. & D. Cornen, on lot 586, a few miles south of Clarendon, and is supposed to be the same rock from which "646" produces oil, as also the Darling Well, in the Blue Jay section. The fourth is that found by MaGee & Horton in the Barnsville division, and by the old Blue Jay Well. This rock is between thirty and forty feet in thickness, and is 210 feet beneath the gas or "646" formation. Thus, we find Warren County abounding in numerous oil formations, but in no case has oil been found in paying quantity in more than one of the rocks by any well. Where one of these formations is found in perfect order the others seem to be deformed. This would seem to strengthen the theory that petroleum is simply a result of the condensation of gaseous fluids, superinduced by chemical activity in the subterraneous water passages or courses. The vegetation theory seems to be groundless, from the fact that all Warren County conglomerate formations would probably have shared, at

least in some proportion, the natural division of the stores of matter distributed, but some of them seem to have missed it.

A NEW MOTOR.

THE incontestable advantages possessed by gas engines have in many cases been counter-balanced by the inconvenience of requiring special arrangements for generating the gas, and their general application has therefore been limited to large towns. Messrs. Eteve & Lallement, of Paris, have, however, recently invented a new motor, which is reported to have all the advantages of gas engines, without their disadvantages, or those of engines consuming hydrocarbons. It is simple in construction and similar in appearance to an ordinary steam engine, generating at the same time the hydro-carburetted fluid required for its operation. The generation of the hydro-carburetted fluid is effected by forcing air under pressure into a receiver containing a hydrocarbon—such as petroleum, for example. An electric spark fires the explosive mixture when in the cylinder of the engine, and the resulting sudden expansion produces a more or less powerful effect, according as the pressure of the air admitted is higher or lower, and the volume of the mixture introduced greater or smaller. The quantity of hydrocarbon used for each stroke of the piston is very small—in fact, only just what is required to render the mixture inflammable. The result is that the generator is very small, and allows of the engine being moved very easily from place to place. The engine consists of a cylinder, a frame or base plate with feet, a crank-shaft, connecting-rod, piston, piston-rod, slide bars and fly-wheel, similar to an ordinary steam engine. A second connecting rod converts the rotary movement of the crank shaft into oscillations of a lever, which by another connecting rod gives motion to a second lever, which by means of a pump, bellows, or other suitable contrivance, draws air and compresses it into an air receiver on which is a valve for limiting the pressure of the air. A pipe conveys the compressed air from the air receiver into a hydrocarbon reservoir, the said compressed air passing to the upper surface of the petroleum therein; a pipe, which goes nearly to the bottom of this reservoir, conveys the petroleum therefrom to the front and back of the piston. A pipe with branches conveys the compressed air from the hydrocarbon reservoir to the inlet slide valve which works on the cylinder face, pierced with ports for the admission of air and petroleum. The exhaust is governed by a separate slide valve. These slide valves may be worked by eccentrics in the usual way, or by other suitable means. A magneto-electric apparatus is driven by the engine, and is connected to an induction bobbin which, by means of suitable commutators on the crank-shaft and connections to exploders at each end of the cylinder, produces electric sparks for exploding the charges of mixed air and hydrocarbons as soon as the proper quantity thereof has been introduced into either end of the cylinder, whereby the usual reciprocating motion of the piston is effected.

THE TIDE WATER PIPE LINE.

AFTER surmounting obstacles innumerable, the Tide Water Pipe Company has secured the right of way for its sea-board pipe line, from Williamsport to Philadelphia, Baltimore and Parkersburg, West Virginia. From Williamsport, Pa., which has been the terminus of the line since it was laid, three years ago, to Tamanend, is about sixty miles. This portion of the line will be known as the "Middle Division." At Tamanend the line will connect with three important lines of railroad, and, being down grade all the way to the sea-board, there will be no great trouble, and very little expense, in shipping oil to the refineries on the sea coast. This latter arrangement with the railroads will perhaps be temporary, as it is the intention of the company to push on, and some day reach the eastern terminus designated by its name. The distance from the Oil Region to Williamsport is 109 miles, and the line from there eastward is now being laid at the rate of one and one-half miles a day. Five stations in all, with two Holly pumps at each station, will be required between Rixford, Pa., the first station, and Tamanend. From Rixford to Olmstead the distance is only thirty miles, but the elevation is 692 feet. From Olmstead to Williamsport the distance is seventy-nine miles and the elevation only 481 feet, making the work of both stations nearly equal, the greater distance making up for the greater altitude. There will be three stations between Williamsport and Tamanend, for which there has been no names given officially, but they are known as Nos. 1, 2 and 3, and are also called County Line, Muncy, and Schuman Stations. Each of the pumps will cost about $18,000. Six thousand barrels a day will be the ordinary capacity of the line, although 8,000 barrels a day

have been frequently pumped through the 109 miles already completed.

The entire cost of procuring the right of way which this company now have, and will at some not far distant day need, was about $190,000 in cash. General Herman Haubt, now with the Northern Pacific Railroad, was employed for more than fifteen months at a cost of $1,000 a month. This was a high salary to pay to one man, but his services were considered worth it all, as his influence and social standing with the old and wealthy families of the country were worth it in procuring the right of way where others would not have even been granted a hearing.

Henry Harley was probably the first man to suggest a sea-board pipe line. He had so much faith in the project that he put a corps of engineers and assistants at work making a preliminary survey.

After Harley's failure, Benson, McKelvey & Company, the moving and leading spirits in the Tide Water Line, took hold of the project, and never relaxed their efforts until they accomplished their purpose, although it took years to do it. The efforts made to defeat a free pipe bill in the Pennsylvania Legislature, and the arguments used against the bill were of the most ridiculous character. The time is not far away when nearly all the oil produced and in stock in the thousand iron tanks in the Oil Regions will be shipped by pipe line to the sea-board and interior refining centers. The railroads can still find profitable employment in carrying refined until there is a line built capable of carrying that as efficiently as crude is now carried.

FOREIGN COMPETITION IN PETROLEUM.

THE competition which American dealers in petroleum will have to encounter with European producers is not yet precisely determined. It may be assured, however, that Germany must be counted out, despite the *couleur de rose* paragraphs on the subject with which some of our daily contemporaries amuse the oil men and the extravagant assumption of a few Bremen papers. There does not seem to be a much greater chance of obtaining oil in sufficient quantities from the Oelheimer wells than there is for obtaining sunbeams from cucumbers. There was much jubilation, it will be remembered, when oil was first announced as having been discovered in Germany. It does not escape observation that petroleum, asphalt, bitumen and other like substances have always had a peculiar attraction for the speculative public, and it may be doubted whether even diamond diggings, or gold, or coal mining, can show such rapid inflation. English capitalists went over to Oelheim as to an anticipated El Dorado; German banks and speculators eagerly bought up farm lands that had heretofore been unsalable; while not a few Americans, familiar with Pennsylvania methods, were not far behind in the race for the new fields; special trains, filled with speculators, etc., were sent off to Peine; there was a great deal of enthusiastic talk for a time, and undoubtedly a little oil is still extracted; but it is emphatically a case where the game is not worth the candle. One of the largest companies that engaged in the business is bankrupt; another, the "Oelheimer Petroleum Industry Company," with a nominal capital of 5,000,000 marks, submitted a report to its shareholders the other day which was anything but satisfactory, and which has been severely criticised in the German press; and no wonder, in face of the facts. This company, it would appear, was organized August 8, 1881, and up to December 31, 1881, it had pumped 30,700 centners of raw petroleum, the net profits of which were 152,335 marks; and although the acquisition of the Mohr Company, etc., had absorbed one-half of the capital, it was decided to declare a dividend of 12 per cent.

Practically, the German Petroleum is inferior to American, and the new law which has passed the Reichstag, according to consul reports, places the flash test of refined at 115°, which will in all probability prevent the manufacture of the article for illuminating purposes.

It is proposed that this measure shall go into effect on January 1, 1883. It would require a barometric standard of 760 millimetres; the "flashing point" must be at 21° Celsius, and the burning point higher. The Abel test is to be used, as in England.

This measure, the *New-York Commercial Bulletin* adds, is causing no little feeling in the petroleum trade in Germany, as it is alleged that the time is too short to allow of the disposing of oil already ordered. The Berlin Trade Board has sent in a petition pointing out the difference between the positions of the seaboard and interior dealers, and asking that the law do not go into operation before July 1, 1883. The Mannheim dealers suggest April 1, 1883, and point to the large stock now in Antwerp—600,000 barrels, with 100,000 more on the way.

If petroleum is to be submitted to severe tests, it is very certain that the product of the Hanoverian heaths and that of the Galician wells will have to be put to some other than illuminating purposes, inasmuch as it is beyond dispute that the recent increase in accidents from the use of that product in Germany is owing to these essentially to "crude" oils.

PRODUCING IN CALIFORNIA.

THAT California will never be an inviting field for oil producers would seem to be a settled fact. The few companies who operate there do so under very unfavorable circumstances. The sand rock is so irregular that there can be no close calculations made as to where it can be found. Besides, the rock is loose, and readily disintegrates, so that the holes require casing all the way down to the producing rock, which is found at various depths from 400 to 1,600 feet. When the holes are first started it requires a 12-inch bit, and then at various stages of operations the bit is changed, until the last one used is generally a 5-inch bit. There are now completed in all about thirty wells.

Two refineries, not run to their full capacity, refine the crude. One of the refineries is located at Los Angeles, and the other at San Francisco. The latter was erected under the direction of Mr. G. W. Thorn, of Oil City, at a cost of nearly $200,000. Every product made from crude oil is manufactured there, and finds a ready sale.

While the California product helps to supply the demands of trade of the Pacific Coast, yet it will not be likely to ever interfere with the great oil fields of Pennsylvania and New-York, as they stand where they have stood ever since oil became such a great article of commerce, entirely unapproachable as an oil-producing region. For years we have been told of the wonderful deposits of oil, that were to be had at such slight cost, in South America, China, Russia, Germany, Japan, California, Colorado and Utah. Rivers of it were said to be flowing through Persia and Japan: yet our exports to these countries have been constantly on the increase, and even Russia doubled her purchases from us last year over those of 1881. We need have no fear of California as a producing centre.

W. W. HAGUE is about to sink a test-well on the west side of the Allegheny River, six miles above Tidioute. This, it is said, will make the second test by the same party in that latitude.

A BIG GAS WELL.

THE well finished last month by the Niagara Oil Co., in Washington County, Pa., is one of the greatest gassers of modern drilling days. The sands found were not regular, nor as expected, neither did they appear to be oil-bearing. After a six-months' struggle with the drill, a depth of 2,200 feet was reached, when a vein of gas was struck which threw the tools clear out of the hole, and more than fifty feet above the top of the derrick. The strength of the gas can be imagined when it is known that the tools weigh about 800 pounds. All work was then out of the question, as the gas made such a roaring noise that the drillers had to go away from the well fully three hundred yards before being able to make themselves understood. The Company have expended already more than $20,000, and have nothing to show for their money but leases of 60,000 acres of land and the great gas blower. The well is eight miles north of Washington, Pa., in Mt. Pleasant Township. It is just twenty-two miles from Pittsburg, and may be utilized by the latter city in case the supply does not become exhausted soon.

PETROLEUM GAS IN VERMONT.

A PRIVATE letter from St. Albans, Vermont, to a gentleman in Buffalo, N. Y., gives an account of the petroleum gas works in that city, that is interesting to every one engaged in producing petroleum. We have been permitted to make a few extracts from the letter in question, which we give below:

"Our petroleum gas works were completed in October, 1880, and have been running since, or a period of eighteen months, without one cent expense for repairs. The consumers grumbled at first, and found all the fault they could, but we kept right on attending to our business, and now they one and all agree that it is the best gas ever made in St. Albans. We claim that we make this gas twice the candle-power of coal gas. We formerly used Lehigh, Egg and Stove Coal mixed, when we made coal gas. The light from the petroleum gas is beautiful—not the pale blue light of the coal gas, but a bright, rich light. One four-foot burner is equal to two four-foot burners of the coal gas. We make it a little richer, perhaps, than necessary, about thirty candle-power. We like it very much better than coal gas, being cheaper, the works much more simple, and the gas much better. Our oil we

procure from Chas. Pratt & Co., of New-York, who charge us 6½ cents a gallon for crude oil delivered here. We would heartily recommend its use, as being the best and cheapest light ever introduced to the public."

It is a remarkable circumstance that the Manhattan Beach Hotel have six thousand burners using petroleum gas. Scranton, Pa., Wilkes-Barre, and other towns are lighted with petroleum gas. Even away up in St. Albans, Vermont, they are using our crude oil for manufacturing gas, while here at home the Cities of Titusville, Meadville, and Oil City are using coal gas. Strange that the enterprising men of Titusville, Bradford and Oil City, who have done so much to build up their respective homes, should allow this important subject to be taken up and put into practical operation by other towns who are not at all interested in the production of petroleum. Among all oil region towns, Tidioute is the only one that has set a good example by using a portion of large stock of crude for making gas. Tidioute began using petroleum gas more than ten years ago, and has continued it as a profitable enterprise to this day.

COTTON SEED OIL A SAVIOUR.

COTTON seed oil is said to be as good in every way as the imported olive oil, which is very expensive and usually adulterated. Cotton seed oil is also being substituted for lard in cooking. Much of the lard sold in stores is made up of substances that would cause the public to shudder, if they knew what they were. Cotton seed oil is infinitely more healthy and purer. It is also asserted by those who are medical authority, that cotton seed oil is equal to the best imported olive oil in allaying the cutaneous irritation caused by the bites of ticks, red-bugs, and other insects that, although they are never invited, always manage to be present at picnics, at this season of the year, and take an active part in the ceremonies.

It is stated that cotton seed oil has been successfully used in another line of business, so to speak. A traveling preacher, by the name of Barnes, is performing miraculous cures in Tennessee. He cures afflicted people of pride, freckles, stiff necks, rheumatism, evil tongue, red hair, itch for office, apoplexy, and a number of other maladies of a still more serious character. The miraculous cures are performed by anointing the guilty party with oil, and cotton seed oil answers the purpose better than any other. If Barnes comes to Texas, and undertakes to cure all those suffering from itch for office, he will need a great quantity of oil, and a rise in price may be looked for.—*Texas Siftings.*

A VALUABLE OIL BOOK.

MR. Jo. H. Simonds, a Bradford producer, has kept a scrap-book containing articles written by nearly all of the correspondents of newspapers who visited the Oil Regions in the early years. These documents throw a great deal of light upon the early movements throughout the region, especially during the years of 1864 and 1865. We have been particularly fortunate in obtaining the record for reference in compiling reports of the business of those years, and in giving a brief history of the progress of developments. Mr. Simonds was a resident of Franklin, Venango County, at the time, and, being a large dealer in real estate, interested himself in the reports made of the region, to the extent of preserving all the articles that he read, and they were very numerous. In one instance the *New-York Herald* published a valuable map of the entire producing region, as then known, together with a lengthy description of the country and the operations. It is a most valuable book.

MR. ROCKEFELLER'S HIDDEN RACE TRACK.

GREENWICH, Conn., April 19.—The half-mile trotting track of Mr. Wm. Rockefeller at his farm in this place, on which workmen have been engaged all winter, was finished to-day. Good judges say that it is the best half-mile course in this country. The immense stone wall built around it, in some places twenty-two feet high and three feet across at the top, looks like a fortification, and completely hides the interior from observation. The infield is a beautiful lawn. A deer park is now being fenced off. Mr. Rockefeller recently purchased thirty acres of land on the south side of his farm. Men are now building a stone wall around his entire place.—*N. Y. Sun.*

MR. Rockefeller is known as a refiner of oil, but no one had supposed until now, that refiners were adopting the strange and unaccountable ways of producers. This new method of building a Chinese wall around a private race-track and making a "mystery" out of it we suppose will now come into general use, the same as boarding up derricks, and mystifying every new well in each new district, has become general among producers. Mr. Rockefeller has set a bad example, especially to the "outside" refiners, who have not been vaccinated against the contagious disease of extravagance.

"PETROLEUM GAS."

ARTICLE NO. V. BY M. H. BUTLER.

THIS question has been discussed in all of the previous numbers with reference to its general application, and it will now be considered with particular reference to Coal Gas works, as at present established throughout the country. In a former number, the query was admitted, upon reasonable deduction, why has not *Petroleum* long since taken the place of *Coal* in Gas manufacture? etc. A good and sufficient answer was reserved for a future time and will now be given. The Gas business, or the business of supplying illuminating gas for public and domestic purposes, was successfully commenced in America about sixty years ago. The business has continued to increase and extend until the system has now become general throughout the country, and the gas interest can safely be said to be the richest and most influential of all corporate interests of this country, except, perhaps, the railroad interest. For the space of forty years before the advent of petroleum, these incorporated companies had been using bituminous coal, and of the variety known as *cannel* coal; this coal has continued to be found in abundance and at a cost reasonably low for the purpose used. Their works throughout were constructed with special reference to the use of coal. Their investments returned them large dividends, meantime their gas product was being furnished to consumers generally at rates reasonably low compared with the cost of other artificial illuminants, until petroleum flooded the markets and quite upset all reasonable calculations. It was formerly said of coal gas that the *Sun* was its only competitor. Now petroleum has knocked all competitors out of time, and has given the sun a black eye. To more fully protect their interests, and doubtless, too, for the purpose of additional gain, the larger corporations, here and there, joined together and purchased these cannel coal deposits, so that the gas interest, virtually owning the crude material, have, in addition to the many other reasons, *this very convincing one* to determine them in their choice. But for all that, they cannot, and do not, ignore the fact that petroleum has occasioned them very serious annoyance, not to say very great loss. How to obviate the annoyance, and guard against further and increased loss, would seem to be a question well calculated to engage their earnest attention, and enlist their best efforts. To the task of so engaging the attention of the coal gas companies we are now committed. We are fully conscious of the magnitude of the self-imposed duty, and are by no means insensible to the great danger incurred by thus *publicly parading the question*. We have waited long and anxiously for a sensible awakening of the gas interest to the plain duty so long demanding their attention. It will doubtless appear presumptuous in us to attempt the discussion of a subject which, under the circumstances, might well challenge the exercise of far greater abilities. But this is a field where nothing seems as yet to have been attempted; therefore, while *ability sleeps, enterprise* pushes forward, impatient of delay. To the end that we may be clearly understood, we will not leave the matter of our *fears* to rest upon *inference*. *What is meant by the great danger incurred* by *public announcement* is briefly this: The Standard Monopoly profits largely by refining our oil and selling it as a liquid illuminant; the superabundant supply gives it control *absolutely*. In the nature of things it will not *tolerate*, much less *countenance*, any move tending to the enlarged consumption of the crude product for other than refined purposes, and then only within its own control. Now, if it can be made clear to the gas corporations that their interests can be largely served by assisting in the reduction of the superabundant stocks, it must necessarily follow that the monopoly's efforts will be exerted to prevent the possibility of such a consummation. For this reason, then, the *public* discussion of this side of the question is to be deprecated, because it must, in the nature of the case, invite opposition, powerful beyond comparison. Fully appreciating the nice sense of honor of the AGE's Publishers, and proud of the high position attained by their choice publication, we have felt constrained to avoid all mention of the monopoly in all former numbers, and, too, we are not insensible to the fact that the public look with no little disfavor upon articles of general interest interlarded with frequent reference to matters of purely local concern. We should, however, be blind to the plainest observation, and recklessly indifferent to the most important considerations, were we to permit the AGE readers to believe that the question will stand or fall by reason of its own intrinsic worth. Resting our fears upon well founded reasons, we have briefly outlined the probable action of the monopoly, and now continue the subject. Why should the coal gas companies be particularly interested in this matter? For the most obvious of reasons, because the price of their product is made to appear reasonably low or unreasonably high as compared with the price of our liquid illuminant. Comfort and

convenience are lost sight of when the fact stares the consumer in the face, that refined petroleum can be had for almost nothing. As a consequence of this, the public have long since commenced the agitation of this matter of cheap light and seem determined to carry it on indefinitely against the gas companies, unless they take the proper means to render this unfortunate state of affairs inoperative. It is, perhaps, needless to remark here that the producers of the crude product would heartily second any substantial effort to enhance the price of their product, and the suggestion is ventured that they would make every effort within their power to maintain, hold and jealously guard the position gained. Such an alliance as is here indicated, might, at first sight, appear as a heartless and systematized attempt to impose burthens upon the people. We are convinced, however, that the people have at present to chose between petroleum *forced* upon them at a price unreasonably low, and illuminating gas (by comparison at least) excessively high. They do not expect, and are not entitled to receive, their lights for nothing, but, whatever their *expectations*, our immediate *wants* are most urgent. It is clearly, then, our right and our duty to make all honorable efforts calculated to enhance the price of our product, and to this end the co-operation of interests mutually concerned and affected are, or should be, invited. We have reason to believe that the gas interest would take a practical, commonsense view of the matter, and render us invaluable aid in the solution of this question. As a matter of fact, it is clearly within our power, with their aid, to put an end at once and forever to the ruinous prices which have bankrupted the oil region. Suggestions so startling may, perhaps, only excite sympathy for the writer, but let it be remembered we assert *possibilities*. It remains for the producers by their intelligence and perseverance to strive for the *probabilities*. They will not be left to a blind chance, but will see the possibilities made reasonably clear, as this branch of the question develops hereafter in the AGE.

APRIL SALES.

FOLLOWING is a summary of the sales of oil at the Bradford, Oil City, Pittsburgh, and New-York Oil Exchanges during the month of April. Nothing less than 1,000 barrel certificate ever sold; each barrel represents forty-two gallons:

	BRADFORD.	PITTSBURGH.	OIL CITY.	NEW-YORK.
January,	23,885,000	11,441,000	27,163,000	
February,	19,412,000	9,153,000	22,207,000	
March,	27,467,000	13,208,000	29,448,000	
April,	22,245,000	8,325,000	19,171,000	15,000,000

Average runs shipments each month of year for April 30th:

	Total Runs.	Bradford Runs.	Total Shipm'ts.	Bradford Shipm'ts.	Charters.
January,	70,401	62,229	55,798	40,864	33,877
February,	81,853	72,825	63,062	47,183	43,075
March,	81,186	65,758	53,489	38,963	41,080
April,	80,158	67,392	54,413	35,662	35,453

APRIL OFFICIAL QUOTATIONS FOR CRUDE.

THE following table shows opening, highest, lowest, and closing quotations at the Oil Exchange each day.

	Opening.	Highest.	Lowest.	Closing.	Avg.
1	82¼	83	82¼	83	82⅝
3	80⅜	80¾	78⅜	78½	79½
4	78⅜	79⅛	77⅜	78¼	78¼
5	78¼	78¼	77½	77⅞	77⅞
6	77⅜	78⅞	77⅜	78⅜	78⅛
8	79	79⅞	79	79⅛	79½
9	. .	. .	. .	. .	. .
10	79¼	79⅞	78¼	78¼	79 1/16
11	78⅛	78⅜	77⅝	77⅞	78
15	78	79⅛	78	78⅞	78½
13	79	79¾	78⅞	79¾	79⅜
14	80	80¼	79⅜	79⅜	79¾
15	79⅜	79½	78⅝	78¾	79 1/16
17	78¾	79½	78⅝	79½	79 1/16
18	79⅜	79⅜	79	79⅛	79¼
19	79¼	79¼	78⅛	78¼	78¾
20	78⅜	78⅝	78	78	78¼
21	78	78¼	77¾	78¼	78½
22	78⅜	78¾	78⅛	78⅝	78½
24	78⅝	78⅝	78	78	78¼
25	78	78	77	77	77½
26	77	77¼	76⅜	77¼	76¾
27	76½	76½	76	76⅛	76¼
28	76	76½	76	76⅛	76¼
29	76¼	76¼	74¾	74⅞	75½
Average,					78½

APRIL OFFICIAL QUOTATIONS FOR REFINED.

THIS table gives the daily quotations for refined oil at the principal foreign as well as domestic ports.

April.	N. Y. cts.	Philadelphia. cts.	Baltimore. cts.	Antwerp. fr'c.	Bremen. m'rk.	London. pence.
3	7⅜	7¼	7⅜	17½	7.10	5⅝
4	7⅜	7¼	7⅜	17¼	7.10	5⅝
5	7¼	7⅛	7¼	17¼	7.10	5⅝
6	7⅜	7¼	7⅜	17¼	7.10	5⅝
7	7⅜	7¼	7⅜	17¼	7.10	5⅝
8	7⅜	7¼	7⅜	17⅜	7.15	5⅝
10	7⅜	7¼	7⅜	17⅜	7.15	5⅝
11	7⅜	7¼	7⅜	17¼	7.15	5⅝
12	7⅜	7¼	7⅜	17¼	7.10	5½
13	7⅜	7¼	7⅜	17¼	7.10	5½
14	7⅜	7¼	7⅜	17½	7.10	5⅝
15	7⅜	7¼	7⅜	17½	7.10	5¾
17	7⅜	7¼	7⅜	17⅜	7.05	5¾
18	7⅜	7¼	7⅜	17¼	7.05	5¾
19	7⅜	7¼	7⅜	17¼	7.05	5⅝
20	7⅜	7¼	7⅜	17¼	7.00	5⅝
21	7⅜	7¼	7⅜	17⅛	7.00	5⅝
22	7⅜	7¼	7⅜	17⅛	7.00	5⅝
24	7⅜	7¼	7⅜	17⅛	6.90	5½
25	7⅜	7¼	7⅜	17¼	7.00	5½
26	7⅜	7¼	7⅜	17⅜	7.00	5½
27	7⅜	7¼	7⅜	17⅜	7.00	5½
28	7¼	7⅛	7¼	17¼	6.90	5½
29	7¼	7⅛	7¼	17¼	6.90	5½

THE PETROLEUM AGE.

DEVOTED TO THE

INTERESTS OF THE PETROLEUM TRADE.

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W. J. McCULLAGH, *Editor.* A. J. CARR, *Business Manager.*

PRODUCERS have great reason for encouragement—they begin to discern signs of the enlargement of drillable territory.

"WHAT do you know about 646?" has been passed around the region as a conumdrum and at this writing (May 5th) it remains unsolved.

WE are indebted to the Hon. J. C. Walker, U. S. Senator from this district, for the Report of the Commissioner of Agriculture, at Washington. It is a valuable document for reference.

"IMMEDIATE shipment" has been talked of in the Allegany, N. Y., field. Anything for a change. The operators there have maintained a distressing monotony of 8 new wells per day for more than a month.

WARREN County seems destined to play an important and conspicuous part in the work of furnishing the world with cheap light in the near future. There are those who behold with a prophetic eye 15,000 barrels a day production in that district. It will require considerable time, however, to reach that altitude.

IT is stated by a correspondent that, had the Chinese bill succeeded in receiving the President's signature, all Chinese ports would have been blocked against American commerce and the result would have been very damaging to the petroleum trade. In the President of the United States the bulls of the trade have had a profound and stalwart backer.

THE fifth chapter on "Petroleum Gas" by Capt. M. H. Butler appears in this issue. As the captain proceeds with this subject he appears to warm up to it somewhat. In this letter he charges that the Standard Oil Co. would oppose any measure tending the enlargement of the uses of petroleum other as an illuminant and then only—when controlled by itself—that it would appear as the foe of higher prices. But just why the Standard Oil Co., being an immense holder and storer of petroleum, both crude and refined, should act the part in this drama assigned it by the captain is not clear. As to the position of the Gas Companies, however, his arguments or statements are logical and entirely true. The vital question, "Why has not petroleum long since taken the place of coal in gas manufacture?" is reached, and there can be but two reasons offered in reply: The first is, that stated in this letter of Capt. Butler's, that the Coal Gas Companies fear the loss of large amounts of money paid for coal lands, etc., and the other is because it has not been as yet properly tried. It is coming into use, however, in spite of all opposition. When gas is successfully made from it, boilers and furnaces will be successfully heated by it.

THE charge of (unintentional) radicalism has been made against the AGE in dealing with the question of using oil as an article of fuel. Elsewhere the matter is again touched upon, and though it still remains a subject admitting of doubt and speculation to some extent, yet, with oil ranging in price below one dollar a barrel, we still feel inclined to the side of the opening and of a broad field for consumption in this direction. The price of oil does not seem to depend entirely upon the condition of the producing fields. It sinks or rises according to the pulse of the trade; that is, if bulls take a spell of bearing, the market generally goes down. Then, if it should happen to go off a few cents, the banks who are carrying certificates, representing millions of barrels, begin to call for additional margins and in case of a failure on the part of holders of these certificates to "come to time," the oil is bounced on to the market, and aids in the work of depressing values. Then, furthermore, it has come to be believed by nearly all dealers that buying oil and holding it for an advance at an expense of 60 cts. per thousand barrels per day is a slow way of making riches. The men who goes short and gains a cent or two a barrel makes more money than the man who purchases and wins by a cent or two. The former in addition to making the clear cent or two also gets the carrying rate. Therefore, with large and increasing stocks, with 250 new wells per month in the Allegany field, and an occasional "646" looming up in the forests remote from former

developments, it is not strange that being multiply and replenish the trade. Of course, there is a time coming when it will not pay to be short at present prices—72⅝, May 4th.

The export demand for petroleum continues large, notwithstanding the assertions of croakers that there would be a large falling off this year.

It was thought that the sudden collapse of the oil market would have a tendency to retard drilling in Allegany; but the work is rushed as if nothing had happened.

It is stated that the Standard Oil Company has its eyes on the gas manufacturers of the Eastern cities, with a view of furnishing cheap light from the use of petroleum. This is sensible, and will pay.

It is related that a woman bordering on imbecility has recently acquired a $30,000 fortune as a result of the "646" excitement. Imbeciles are becoming numerous in the oil business. It is hoped, however, they may not multiply as rapidly in the Warren field as in the Allegany. There is a home for such in the former.

AN IMPOSTER AT LARGE.

Atlanta, Ga., April 28, 1882.

Editor Oil, Paint and Drug Reporter:

We deem it our duty to warn the oil trade, through you, against one Joseph Rozensweig, alias J. K. Lawler, who was released from the Ohio Penitentiary about a year ago, where he had served a five-years' term for forgery. He left here about a month ago, after having obtained money from two or three of our customers on forged orders, purporting to come from us. His family, we understand, are respected and wealthy citizens of Erie, Pa., and he was, prior to his incarceration, connected with the oil business in Cleveland. Before he left here he told some parties that he would return to Erie, but we know that he is not there; he will most likely go farther South with the intention of bleeding a few more of the innocents. We enclose you his prison description. DUCK & CO.

The prison description referred to is as follows:

"Age, 30; native Pennsylvania; 5ft. 8in. in height; black eyes, brown hair, dark complexion; has a high, broad forehead; brows arched, and a part Roman nose; ears large and stand out; Jewish descent and countenance; slender built."

CORPORATE POWER IN THE UNITED STATES.

PERHAPS in no other nation is the power of corporations more seriously felt than in the United States of America. It seems to have become a species of mania with capitalists to combine their forces with a view of controlling those branches of trade and industry in which they happen to be engaged. This spirit has ruled to a certain extent throughout all ages, all over the world, but it was left to the present or petroleum age and America to develop its great strength and wonderful effects in the conduct of commerce and trade. All are quite familiar with the great corporation that has controlled the oil refining interests of this country for a decade, and also with the other organization which has performed the function of transporter of the product in the region of supply. As to the effect that these have had upon the oil trade there is a diversity of opinion. In some cases it may possibly be true that co-operation or combination of capital may prove beneficial, but in general there is danger always lurking around in the neighborhood. The tendency is undoubtedly to evil. There is created, always, a feeling of unrest in the mind of the classes upon whom capitalists really depend for success in business, viz., the laboring classes, when they discover the grasping disposition of those who employ them. Then there is a large class which comes in between these two, forming a middle and very jealous portion of business society. These are what may be termed the "small men." They watch with a peculiar and distrustful eye every movement of those forces engendered by coalition, and are always ready to sound the alarm, whether there are just causes for it or not. Just now there is discovered all over the United States a very unhealthy feeling—a feverish anxiety as to what the capitalists of the country are going to do next. Labor unions are powerful, and are multiplying in every State. And it is perhaps needless to add that, in their way, they are equally as dangerous and damaging to the welfare of commerce as are the other combinations referred to. "Strikes" are successfully maintained by these, and, judging from the developments in this direction during the past four months, it is within the bounds of reason to state that it is not improbable that the country is rapidly hastening toward another season of great conflict between employer and employed. It may be delayed for a few years, but in all probability it will come. The great railway building mania, so prevalent at

present, will cease to actuate men of capital, and a reaction is likely to ensue. These mammoth corporations have in a large measure controlled the legislation of our country—not only of the Federal Government, but that of the States as well—for many years, and every accession made by them has been a nail driven into the hands of the smaller concerns, as well as into the feet of the individuals who really make the country prosperous by their energy and industry. There are but few cases on record where individuals conducting industrial establishments have ever encountered difficulty with laborers, for the reason that they are always ready and willing to concede all that is right and proper. It is not so with corporations. They are said to be soulless, and so far as the spirit of compromise or sympathy with the discontented is concerned the epithet applies with full force. It is quite difficult to determine a remedy for the evils that have arisen and may hereafter arise from the separation or estrangement of labor and "combined" capital. So long as two or more can assure themselves of greater gain by a coalition of forces in any given direction in commercial and industrial pursuits, it is to be presumed that they will continue to combine. In fact, the disposition is so strong at the present time among capitalists, that corporate power is being increased with every returning sun. Small manufacturers already begin to feel the hand of oppression from this source. It seems next to impossible for the individual to compete with the corporation in the manufacture of any given product. Just why this is so is not explained. It is to be inferred that transporting corporations have a peculiar fondness for manufacturing corporations, and *vice versa*. Then, moreover, in the matter of competition in the markets for manufactured products the individual who comes in contact with corporate power is very liable to become exhausted and to drop out first. Therefore, rather than to undergo defeat, and incur financial death, the ordinary man will drop into the traces of combination. Reasoning in this manner, it would appear as if the future was to reveal a peculiar state of things. The questions naturally arise: Are all industrial pursuits to be governed by a few heads? Are all railways to be managed under one dictation? Are all men who are not willing to become part and parcel of a combination to remain poor and servile to the powers? It is for the governments of the States, and lastly for that of the United States, to inquire into these things, and if possible prescribe a remedy. It could be made a penal offense for an individual or a corporation to dispose of goods or wares below a fair living price when it was known that such disposition was solely for the purpose of injuring the business of another. The same might be done in the matter of railroad competition. Unless a check is soon placed upon this rapidly growing disposition there will, beyond doubt, come a time in the history of this country when dangerous conflicts will occur.

RUNS, DELIVERIES, STOCKS.

TABLE showing the March and April Pipe Line Runs and shipments, with stocks, on April 30th, 1882—official.

District.	Receipts, Pipe.	Barrels, Mch. 31.	Barrels, April 30.
Bradford	United		
Tidioute & Titus'e,	"		
Lower Country	"		
Warren	"		
Monongahela	"		
Total	"	2,305,538.30	2,145,965.63
Bradford	Tidewater	236,854.44	206,518.25
Warren	Union Oil Co	40,567.66	38,217.01
Titusville	Octave Oil Co.	4,850.56	4,575.17
Oil City	Charley Run	455.60	308.55
Shaffer	Shaffer Run	717.00	590.00
Franklin	Franklin Pipe	6,490.25	6,644.88
Total all Lines		2,595,473.81	2,402,819.49
Average per day April			80,093.98
Average per day March			83,724.96
Average per day, February			83,547.40
Average per day January			71,855.35

Deliveries.

District.	Pipe.	Barrels.	Barrels.
All Points	United	1,453,354.46	1,381,093.10
Warren	Union Oil Co.	19,381.53	19,824.79
Titusville	Octave	4,537.31	4,216.18
Franklin	Franklin Pipe	3,909.11	6,039.35
Shaffer	Shaffer Run	552.60	546.43
Oil City	Charley Run	366.65	268.63
Bradford	Tidewater	218,055.37	266,045.12
Total deliveries		1,700,157.03	1,678,033.60
Total Runs		2,595,473.81	2,402,819 49
Am't of Runs in excess of Shipm'ts,		895,216.78	724,785.89

District.	Pipe.	*Net Stocks Mar. 31.* Barrels.	*Net Stocks April 30.* Barrels.
Oil City	Charley Run	3,352.50	3,375.00
Bradford	Tidewater	2,312,263.10	2,260,824.82
All Districts	United	24,776,087.93	25,526,101.30
Shaffer	Shaffer Run	26,274.96	25,915.73
Warren	Union Oil Co.	115,141.84	132,376.38
Titusville	Octave Oil Co	8,881.17	9,880.29
Franklin	Franklin Pipe	10,805.43	11,410.96
Total April			27,969,884.48
Total March			27,252,806.93
Total February			26,414,274.36
Total January			25,788,071.79
Increase April			717,077.55
Increase March			838,532.57
Average increase per day, April			23,902.58
Average increase per day, March			27,049.44
Average increase per day, February			22,364.00
Average increase per day, January			12,174.73

REPORT
OF
OIL OPERATIONS FOR APRIL.

WELLS COMPLETED.

TUNA VALLEY.

Lot.	*Operator.*	*Production.*
Haycock, Hillman & Beatty		10
Scott, Bowers & Howell		12

EAST BRANCH.

Dikeman, Whitney & Wheeler, No. 25		15
E. T. Co., Enterprise Transit Co.,	No. 31	15
" " "	No. 32	15
" Benner Bros.,	No. 10	15
Cross, American Oil Co.,	No. 4	10
Tibbetts, Emery Oil Co.,	No. 2	10
" " "	No. 3	10
Deitter, " "	No. 16	12
Morris, " "	No. 35	10
" " "	No. 36	12
Coburn, Burroughs & Hazelton, 4		12
Drake est., Morris, Drake & Fuller, 8		10
Cutting, Guy & Drake, 2		12
Clapp, J. M. Clapp		15
A. Brown, Jasper Morris, 1		8
J. N. Brown, Gilbert, Shipman & Co.		8
Jewett, Quintuple Oil Co., 10		12
J. De Golier, " 12		12

WEST BRANCH.

Gas Hollow, A. F. Heald, No. 3	8
Crooker, Hazelton Bros.	10
Warrant 3909, Levitt and others	dry
Wells	23
Production	253
Dry	1
Average	11½

THE QUINTUPLE TRACT.

Lot 42, Tarbell & Morris, No. 2	10
55, B. F. Brinton, No. 2	12
72, E. K. West, 4	15
132, Woodbury & Campbell, 3	12
152, A. I. Beers	12
153, E. Strong & Co., 48	12
156, Chemung Oil Co., 8	11
166, E. Strong & Co., 47	15
167, " " 46	15
180, Heald & Cisco	10
188, Hunter, Jennings & Co	12
237, J. A. Wing & Co, 3	15
238, Shearman Bros., 2	15
241, Barnsdall Bros., 2	12
262, Hamburg Oil Co.	15
277, Baker & Co., 2	12
Salam, Quintuple Oil Co	10
Wells	17
Production	215
Average	12⅝

KENDALL CREEK.

Richardson, Peck & Freeman, No. 3	12
Fisher, Peck & Freeman, 3	10
" Larrabee & Wheaton, 3	10
Buchanan, Anchor Petroleum Co., 15	15
F. A. Moore, F. A. Moore	12

FOSTER BROOK.

C. B. & H., Lot 25, Treat & Porterfield, No. 5	15
" " Eighmey, 10	10
" " Wolf & Dreibelbeis, 6	8
" " Seiple Bros. & Co., 4	12
" " A. J. Coldron, 36	10
" " Porter & Gilmor, 12	12
" " Chauncey Sharp, 8	10
W. & K., Willoughby & Kinkaid, 16	10
Ent. T. Co., F. W. Mitchell, 2	10
Borden, Geo. V. Forman, 13	12
B. & R. pur., Baum & Richardson	5

SUMMIT, MARION & RIXFORD.

Borden, Urquhart & Lavens, No. 2	10
" Bowers & Howell	8
" Shear Bros. & Braunschwager, 11	12
Mather, C. B. Whitehead	8
Berger, Brownyear, Martin & Co., No. 2	8
P. & L. pur., Robert Gregg, No. 2	8
Whitcomb, John Onsel, No. 4	10
Book pur., Hazlewood Oil Co., No. 38	15
" " " No. 39	15

STATE LINE AND OIL VALLEY.

Hamlin, J. B. Daniels & Co., 16	15
Angell tract, Angell Oil Co., 35	20
" " 36	20
" Weir & Steele	15
" Wright, Vandergrift & Odell	15
Borden, Fertig & Henne, 22	25
" " " 26	20
" Smith & Jones, 4	20
" " " 8	20
" Forman & Lawton, 11	15
" " " 12	18
" Johnson & Co.	10

INDIAN CREEK.

Shattuck, Eaton & Howe	15
H. Loup, Kribbs & Stevenson, 2	12
H. Loup, Hart & Hicks, 20	15
Hamlin, Forest Oil Co., 32	8
" Keystone Oil Co.	15
" Triangle Oil Co.	12
Barse, Union Oil Co.	12
Loup, Kribbs & Stevenson	8

MEEK'S CREEK.

Keating, J. L. McKinney & Co., No. 26	10
Weston, Alfred & Curtis, 7	8
Gale, Curtis & Taylor, 5	8

FOUR MILE.

Rock City, Brahaney & Duncan, No. 4	12
" Quartelle Oil Co., 21	12
Lippert, Griffin T. Howard, 9	15
J. Moulthros, Moulthros Bros., 9	12
Harbel, Bell Bros. & Coleman, 14	15
Van Campen, Stowe & Talcott, 2	12
" R. W. Evans	15
Stevens, Book & Rhodes	15
Lippert, Griffin & Co.	12
J. Moultros, Moultros Bros.	10

KINZUA.

U. O. Co. pur., Union Oil Co., No. 33	40
" (lot 3) C. P. Byrom	30
C. P. H. pur., Cornwall, Parker & Co., 34	20
B. & M., Baker & Malone, 18	20
Turnip Run, Warrant 2,256, Grace & Goldsborough	dry

SUGAR RUN.

Richardson, Chapin & Co., No. 2	12
Holmes, Chapin & Co., and Wright & DeGolier	20
Wells	65
Production	875
Dry	1
Average	13½

BIG SHANTY.

Dent Lands, Dent Oil Co. 16	25
" P. C. L. & P. Co., 25	20
" Whitney & Wheeler, 10	20
" " 11	20
Bingham, lot 151, Geo. V. Forman, 7	15
" 176, Fertig & Henne, 5	20
Moody, Minard Run Oil Co., 83	30
" " " 85	20
York, Book & Whitney, 5	10
Sullivan, Mullen, Mills & Boden, 7	20
Warrant 2256, John McKeown, 2	8
Warrant 2256, " 3	10

COLE CREEK AND BINGHAM.

G. & Van V. pur., The Union Oil Co., No. 27	20
Lot 453, Bayne, Fuller & Co., No. 42	18
417, Forman & The Union Oil Co., 15	20
418, " " 14	15
492, Johnson & Co. & The Union Oil Co., No. 36 b	15
492, Johnson & Co. & The Union Oil Co., No. 37 b	20
415, Johnson & Co. & The Union Oil Co., No. 116	30
409, J. L. McKinney & Co., 9	15
439, " " 20	15
407, Bennett & Quick, No. 16	12
Simpson, George V. Forman, No. 13	12
" " 14	10
Forman, " 2	15
Brown & Keller, No. 2	10
Bordell Short Oil Co	dry
Wells	27
Production	445
Dry	1
Average	16½

WARREN FIELD.

STONEHAM—CLARENDON.

Lot 77, Clinton & St. John	5
77, O. Hoffman	6
78, David Beatty & Son, No. 16	8
78, " " 17	10
79, M. Butler & Co., No. 2	15
79, Marsh, Robinson & Kuhn, No. 6	15
80, May & Groves, No. 2	6
80, Thomas Murphy	12
80, Thayer & Crosby, No. 3	12
80, Winsor Brothers, No. 8	15
80, " " 9	15
105, Cowles & Atkinson, No. 5	15
105, D. W. Brinton & Co., No. 2	10
106, H. P. Malone, No. 4	12
105, Shugert & McLouth, No. 3	10
161, Tiona—Grandin & Hague	8
498, Kelly & Richards, No. 4	15
498, New Hope Oil Co, No. 2	15
498, George Givens, No. 2	15
498, " " 3	13
498, Wm. Hopewell, No. 4	20
Lot 498, S. Waters, No. 2	15
498, R. Taggart & Co., No. 2	9
498, J. Conrath, No. 1	12
528, Wm. Green	10
528, Nickles, Munn & Co., No. 2	20
528, Marsh & Brown, No. 2	15
528, Speer & Armstrong, No. 9	15
528, Borcher & Co	15
530, Bradenbaugh & Schnabenbouer	10
530, Waugh & Townsend, No. 1	10
557, Bryan, Hopkins & Co., No. 4	10

SHEFFIELD.

Lot 408, Donaldson farm, Magee & Horton, No. 8	15
408, Donaldson farm, Magee & Horton, No. 9	20
408, Wetmore, Howe & Co., No. 7	20

GLADE DISTRICT.

Reig, Marsh & Brown	20
Cable, Green & McWilliams	15
Icop, John Bell	15

FOREST CO

Balltown, Grandin & H	3
Balltown, May & Kelley	dry
Wells	40
Production	496
Dry	1

ALLEGANY FIELD.

SCIO.

Lot 2, Hardison & Morse	10
2, Nameless Oil Co., No. 2	5
Taylor, Allen & Nobles	10

ALMA.

Lot 5, Belamy & Elliott	15
17, Belamy & Taylor	15
17, O. P. Taylor & Co., No. 10	15
17, " " 12	25
23, Anderson, Otis & Co., 16	15
23, " " 19	20
23, " " 22	15
23, " " 23	20
23, Harper & Breckenridge	15
33, Dow & Browning	15
23, Duke & Norton Oil Co	20
38, Westervelt & Co., No. 3	10
38, Wm. Chambers, 2	12
38, Dewese & Weaver	20
40, Star Oil Co. (Morse & W.), No. 6	20
40, " " 7	20
39-40, Duke & Norton Oil Co., 14	20
39-40, " " 15	15
94, Weaver	dry
143, J. K. Shadman & Penell Bros., No. 3	20
143, Bush & Cole	20
144, Bunker & Fitzsimmons	12
Wells	25
Production	384
Average	15⅓

WIRT.

Lot 17, Koch Bros	15
17, Taylor & Humphrey	20
17, Leonard, Black & Co	20
25, Manhattan Oil Co., No. 3	20
25, Boulton Farm Oil Co	10
25, " "	20
25, L. C. Whitney, No. 3	25
25, Coast & Sons	25
25, Homestead Oil Co., No. 2	20
33, Allen & Taylor, No. 7	20
33, " " 8	20
33, " " 9	20
33, Patty & Bliss, No. 8	18
41, Finegan, Wall & Nelson, No. 2	20
41, Thomas Painter	20
41, Wellman, Miner & Pitts, No. 19	23
41, " " 20	25
41, H. B. Davis & Co., No. 7	15
41, Graus & Griffin	10
41, D. D. Flanigan	15
41, M. C. Mulkin	12
42, Samuel Boyle	dry
49, Huff, Ege & Anderson	25
49, A. A. Richardson, No. 5	40
49, A. A. Richardson, Daniels farm	dry
49, A. & H. Painter, Richardson farm, 2	30
49, " Daniels farm, 1	15
49, " " 2	20
49, N. T. Saunders, 5	20
49, " 6	30
49, G. V. Foreman	30
57, Lynch & Snyder, 3	25
57, Lupher Bros., 5	30
57, " 6	40
57, " 7	30
57, Thompson & Loan, 11	20
57, Ford, Ellis & Co	dry
57, Coleman & Co., 4	15
Wells	38
Production	763
Dry	3
Average	20

BOLIVAR.

Lot 5, Star Oil Co., No. 2 10
8, S. D. Chase & Co. 10
8, A. A. Hopkins, No. 2. 15
14, John Cochran, ... dry
24, Johnson & Bartlett, No. 3 15
24, Duncan Cameron, No. 2. 10
24, " No. 3. 10
24, Milligan Bros., No. 4 18
24, Boulton Bros., ... 8
30, H. J. Morton & Co. (gas) . . . . . dry
31, Fisher Bros., No. 3 20
31, Lowry & Shear, No. 3. 2
32, Hazlewood Oil Co., No. 17. 23
52, " " No. 18. 40
32, Brown & Reid, No. 5 30
32, Smith & Co. 25
32, William Sawyer, No. 5. 15
32, Short & Son, No. 3 30
32, " No. 4 30
32, Black & George, No. 9. 20
32, " No. 10. 40
32, Thomas Hacket, No. 7 25
32, " No. 8 40
32, " No. 10 30
32, Manning & Co., No. 1 20
37, Baum & Parker, No. 1 15
38-46, W. & A. Cochran, No. 2 40
38-46, " No. 4 40
38, Eaton & Elliott, No. 1. 30
38, Eaton & Root, ... 30
38, Franschot Bros., & Merrill, No. 1 . . 30
38, " " 2 . . 30
38, " " 3 . . 16
38, " " 4 . . 20
38, " " — . . 30
38, Carroll Bros., No. 2 25
38, Fisher Oil Co., No. 2 40
38, " No. 3 20
38, Nicholson & Judd 30
38, Whitman & Reep 25
38, Curtis & J. G. Williams 25
38, Forman & Ballard, Eaton farm . . . 25
38, Forman & Crandall, No. 8 12
38, " No. 3 20
38-39, Weiser & Kinkaid, No. 5 15
38-39, " 6 25
38-39, " 7 30
38-39, " 8 30
38-39, " 9 30
38-39, " 10 30
38-39, " 11 25
38-39, " 12 30
39, Gillespie & O'Donell, No. 3 30
39, " 4 60
39, H. P. Malone & Co., No. 6 24
39, " 8 20
39, " 13 20
39, Smith & Wellman, No. 2. 15
39, " 3 25
39, A. A. Richardson, No. 4 30
39, " 5 40
38, Hydrick & Co. 30
38, Kervin & Alshouse 25
39, C. C. Conroy, No. 1 25
39, Whitney & Good, No. 3 22
39, " 5. 25
39, J. H. O'Niel & Co., No. 6 30
39, C. H. Emerson, No. 4 20
39, " 6 22
47, Hefferman & Hanley, No. 9 12
47, " 13 20
47, " 6 20
47, " 10 20
47, Knox & Canfield, No. 1 15
47, " 2 15
47, Anderson Bros., Greenlee & Russell, 45
47, " " No. 2, 18
47, J. Varney, No. 5 12
47, " 7 15
47, " 10 25
47, " 11 60
47, A. J. Thompson, No. 4 12
47, " 5 17
47, " A 5
47, " C 12
47, " D 20
40, Meldrum Farm Oil Co., No. 11 . . . 30
40, " 12 . . . 25
40, " 13 . . . 40
40, W. H. Palmer, No. 1 30
40, " 2 40
40, Steele & Booth 50
40, " 60
40, Anderson & Humphrey, No. 5, est. . 40
40, McCalmont Oil Co. 40
40, " 30
40, Smith & Zeigler, No. 8 30
40, " 9 65
46, Bowers & Howell, No. 1 30
47, Clarion Oil Co., No. 10 40
47, " 13 80
47, " 14 50
47, " 15 40
47, Manhattan Oil Co., No. 4, est. . . . 15
47, " 5, est. . . 25
48, Manning & Co., No. 3, est 20
48, " 30
48, Wallace, Mattson & Thompson . . . 20
48, Scott Mills 30
48, McCalmont Oil Co 30
48, A. W. Nelson & Co., No. 6 25
48, " 7 25
Lot 48, A. W. Nelson & Co., No. 8 20
48, D. C. Brawley, No. 1 30
48, " 2 18
48, Brawley Bros., 7 20
48, Bronson, Kiley & Co 25
48, Steele & Plummer, No. 3 30
48, Richardson Oil Co., 6 30
55, Murphy & Hogan 20
55, Stock & Keeler, No. 4. 18
55, Smith & McCracken, No. 6 20
55, " 20
55, " 20
55, Rowley Bros. 20
55, " 10
55, J. C. Lineman 22
55, " 30
55, Columbia Oil Co., No. 4 15
55, " 5 15
55, Whitney & Good 20
55, Gaskell & Gillespie 12
55, A. J. Thompson, No. 2 25
55, " 10 25
55, McCracken Bros., & Ellison, No. 6 . 25
55, " 7 . 22
56, Showalter Bros., & Co., No. 8 . . . 65
56, " 11 . . . 55
56, " 12 . . . 65
56, I. L. & W. P. Haldeman, 9 35
56, " 10 . . . 40
56, Hays, Book & Gartland, 12 50
56, Hamlin & Rose, No. 7 80
56, " 8 40
56, " 10 30
56, " 11 35
65, McCalmont Oil Co., 7 wells 300
56, I. E. Dean 25
64, Columbia Oil Co., No. 2 25
64, Hoover & Thompson, No. 7 30
64, " 10 30
64, " 11 40
64, Armor & White, No. 13 20
64, " 14 20
64, H. & W. A. Hardison 25
64, John Cornwall, No. 4 25
64, Weiser Bros., 5 30
64, " 6 35
64, H. J. Morton & Co., No. 17 35
64, Kerwin & Reid, 2 wells 50

Wells 167
Production 4647
Dry 2

Average 25 1-7

GENESEE.

Lot 7, H. & W. Weiser 5
7, I. E. Dean 15
7, " 12
8, Hays, Knox & Co., No. 3 25
8, " 7 30
8, Merrill, Perrin & Co., No. 8 10
8, " 10 25
8, J. C. Smith & Son, No. 5 30
8, " 6 30
8, F. E. Boden & Co., No. 20 20
8, " 21 20
8, St. Joe Oil Co., No. 2 25
8, " 3 20
16, Wilson Bros. 30
16, Morrison & Bennett 15
16, G. S. Bussell, No. 4 20
16, Wheeler & Galey Bros., No. 7 20
16, Vandergrift & Miller, No. 4 15
16, D. W. Canfield 15
16, Daggett Farm Oil Co., No. 7 35
16, " 13 25
16, " 9 40
23, Coughlin & Hughes 10
24, R. R. Armor 20
24, Hammond & Co 20
29, Willets & Cranston, No. 2 15
29, " 3 15

Wells 27
Production 562

Average 20¾

THE LOWER COUNTRY.

CLARION.

Kiser, J. Black Jr., & Co. . . . . dry
Davis, Laney Bros . . . . . dry
John Black, John Irwin . . . . . dry

BYROM CENTER.

Tittsworth, Heter & Hulings 5
Wentling, Wentling & Putnam 5
E. Crawford, John Martin 12
Crawford, unknown . . . . . dry

VENANGO.

McCalmont, P. McCalmont 5
McBride, McBride & Co. 8
Morrison, Oscar Wilde Oil Co. . . . . dry
Galey, Kugler & Co., No. 4 5
Rouseville, John Hersh . . . . . dry
Allison, Fisher Bros. 5
Espy, George Espy 5
Plume, Selden & Co. . . . . dry
Plume, Shamburg & Co. . . . . dry
Pin Oak, Fisher Bros. 2

BUTLER AND ARMSTRONG.

Hammil, Simcox & Myers 25
Crawford, Widger & Co. 5
M. Gillespie, Big Venture Oil Co. 5

Wells 20
Production 87
Dry 9

Average 4¼

WELLS DRILLING.

ALLEGANY FIELD.

SCIO.

Lot.	*Operator.*	*Depth.*
1,	Davidson & Co	drilling
1,	Geo. Wright	rig bldg
2,	Nameless Oil Co. No. 3	rig
2,	" " 4	rig
2,	Blatchley & Co.	drill
2,	"	rig
	Whitesville, Parker	rig
	Pixley Hill, Willetts & Root	rig bldg

Drilling 2
Rigs 6

Total 8

ALMA.

Lot 1, Empire Gas Co. 300
1, Phillips Bros 700
2, Hardison & Morse 6 200
2, " 7 . . . . . drilling
2, " 8 . . . . . rig
2, " 9 . . . . . rig bldg
2, Stewart & Co. 1 fishing. 675
4, Scott, Elliott & Co. 5 1000
4, " 6 . . . . . rig
4, Belamy & Taylor 3 . . . . . rig
5, O. P. Taylor & Co. 13. 500
5, " 14. . . . . drill
17, W. T. Lewis & Co. 4 . . . . . rig
17, Gaskell & Workman 3. 1200
17, Belamy & Eliot. 140
17, " 100
17, O. P. Taylor & Co 100
17, " . . . . . drill
18, G. M. Barney. 100
18, " . . . . . rig
18, Mrs. O. P. Taylor . . . . . sand
18, " . . . . . rig
18, Anderson & Otis 8 450
18, " 9 . . . . . rig bldg
18, " 10 . . . . . rig bldg
20, Webster & Son . . . . . sand
22, Wheeler & Co. . . . . drill
23, Anderson & Otis 24. 100
23, " 25. 150
23, " 26. . . . . rig
23, Dow & Browning 3. 500
38, Dewees & Weaver 4. 300
38, Westervelt & Snow 4 400
38, " 5 . . . . . rig
39, William Chambers, No. 3 . . . . . drill
23, Duke & Norton Oil Co. 19 300
23, " 20 800
38, " 17 600
23, " . . . . . 4 rigs
22, " . . . . . 2 rigs
39, " . . . . . 2 rigs
39, " . . 2 rigs bldg
53, Elliott & Torry . . . . . sand
68, " . . . . . sand
78, Baker & Torry. . . . . rig
94, Weaver Bros. & McCalmont . . . . sand
100, Ready & Morher. . . . . rig
121, J. D. Downing (old rig). . . . . rig
121, Hefferman, McDonald & Co. . . . . rig
142, H. M. Harkness . . . . . rig
143, G. H. Bush & Cole, No. 3. . . . . sand
143, " 4. . . . . rig
143, Elliott & Doty. . . . . rig bldg
144, Bunker & Fitzsimmons 4 400
144, Chandler & Grinnell 4. . . . . rig bldg
144, H. P. Boyd 3. 300

Drill 33
Rigs. 29

Total. 62

WIRT.

Lot 17, Reeder & Co., No. 3, fishing 1000
17, Taylor & Humphrey, No. 5 . . . . . rig
17, Option Oil Co., No. 2. 800
25, Harry White, No. 3. 350
25, Fertig Bros., No. 8 1400
25, " 9 . . . . . rig
25, Fertig & Co. . . . . rig
25, Burlison Farm Oil Co., No. 21. . . . 1000
25, " 22. . . . 500
25, " 23. . . . 500
25, " 24. . . . rig
25, L. C. Whitney, No. 4. 1000
33, Alfred & Curtis. 200
33, Wallace, Matson & Thompson. . . . rig
33, Wirt Oil Co., No. 5. 400
33, " 6 . . . . . rig bldg

Lot 33, G. V. Forman 1000
33, Knox Bros., No. 4 . . . . . rig
34, O. P. Taylor 100
41, Finegan, Wall & Nelson, No. 3 . . . 100
41, " " 4. . rig bldg
41, James Scott 200
41, Wellman, Miner & Pitts, No. 21. . . . 500
41, " " 22. . . . 300
41, " " . . . 3 rigs
41, Evans & Griffin, No. 3 300
41, D. D. Flanigan & Co., No. 4 . . . . rig
41, Matlock & Taylor . . . . . rig
49, A. & H. Painter, Richardson Farm, No. 3 800
49, A. & H. Painter, Richardson Farm, No. 4 . . . . . rig bldg
49, A. & H. Painter, Daniels Farm, No. 3 200
49, A. A. Richardson . . . . . rig bldg
49, Galligan & Ward 600
57, Lynch & Snyder, No. 4 . . . . . sand
57, Lupher Bros., No. 8 . . . . . rig
57, " 9. . . . . rig bldg
57, Coleman & Co., No. 5 400
57, Nile Davidson & Co . . . . . rig

Drilling 22
Rigs 18

Total 40

BOLIVAR.

Lot 2, Scott & Elliott . . . . . sand
5, S. E. Karns, No. 4 . . . . . rig
5, Star Oil Co . . . . . rig bldg
6, Pentzer & Love . . . . . sand
6, " " . . . . . 2 rigs
6, Star Oil Co., 3 . . . . . rig
6, " 4. 750
6, Mackin Bros . . . . . rig
8, Carroll Bros . . . . . rig
8, S. D. Chase & Co . . . . . rig bldg
8, A. A. Hopkins, 3 300
8, " 4 . . . . . rig bldg
15, Rufus Sawyer 300
16, Empire Gas Co . . . . . rig
16, Peck & Freeman . . . . . 2 rgs
16, Weiser & Kinkaid . . . . . rig
23, Johnson & Conroy . . . . . rig
24, Empire Gas Co . . . . . 2 rgs
26, Whitcomb & Wilson . . . . . sand
31, Shreeve & Lowry, 4 500
31, " " 5 . . . . . rig
31, " " 6 . . . . . rig bldg
31, Fisher Bros., 4 250
31, Smith & Echbaum . . . . . rig
32, Black & George, 11 600
32, Thomas Hackett, 11 800
32, Hazelwood Oil Co., 19 400
32, " " 20 200
32, Empire Gas Co . . . . . 2 rigs
32, Brown & Reed, 6 100
32, William Sawyer, 6 175
32, " 7 . . . . . rig
32, Short & Son, No. 5 450
32, " 6 100
32, " 7 . . . . . rig
32, " 8 . . . . . rig
32, Manning & Co 350
32, " . . . . . rig bldg
37, Briody, Parker & Co . . . . . rig bldg
38, W. & A. Cochran, No. 3 150
38, " " 5 500
38, " " 6 250
38, " " 7 . . . . . rig bldg
38, " " . . . . . rig bldg
38, Geary, Hefferman, Hanley & Co . . sand
38, " " . . rig
38, Eaton & Elliott . . . . . rig
38, " . . . . . rig bldg
38, Frank J. Clemenger, No. 1 350
38, " " 2 . . . . . rig
38, Nicholson & Judd, No. 2 700
38, " " 3 450
38, " " 4 . . . . . rig
38, " " 5 . . . . rig bldg
38, Whitman, Reas & Co., No. 2 100
38, Curtis & Williams, No. 2 . . . . . rig
38, Forman & Ballard, No. 5 . . . . . rig
38, " " 9 . . . . . rig
38, " " 3 600
38, " " 4 150
38, Franschot & Merrill . . . . . rig
38, " " No. 6 600
38, " " 7 350
38, " " 9 . . . . . rig
38, Nutting & Springer, No. 1 . . . . . sand
38, " " 2 . . . . . rig
38, Fisher Oil Co., No. 4 500
38, " 150
38, " . . . . . rig bldg
38, Hydrick & Co . . . . . rig
38, " . . . . . rig bldg
38, Kerwin & Alshouse, No. 2 175
38, " " 3 . . . . rig bldg
38, Chas. Campbell 500
38, " 100
38-39, Weiser & Kinkaid, No. 13 600
38-39, " " 14 650
38-39, " " 15 600
38-39, " " 16 500
38-39, " " 17 150
38-39, " " 18 100
38-39, Weiser & Kinkaid, No. 19 . . . . . rig
38-39, " " 20 . . . . . rig
38-39, " " 21 . . . . . rig
38-39, " " 22 . . . rig bldg
38-39, " " 23 . . . rig bldg
39, Gillespie & O'Donell, No 5 500
39, " " 6 . . . . . rig
39, " " 7 . . . rig bldg
39, Jack McVey 1000
39, C. C. Conroy, No. 2 700
39, " 3 . . . . . rig
39, Whitney & Good, 9 700
39, " " 4 wells . . . . drilling
39, J. H. O'Niel, 4 600
39, " 5 . . . . . rig
30, C. H. Emerson & Co., 5 350
30, " " 7 400
39, H. P. Malone & Co., No. 5 100
39, " " 9 450
39, " " 10 . . . . . rig
39, " " 11 650
30, " " 12 . . . . . rig
39, Capt. H. C. Stevens, No. 2 . . . . . rig
39, " " 3 . . . rig bldg
39, " " 4 . . . rig bldg
39, " " 6 100
39, Smith & Wellman, No. 24 200
39, " " 5 . . . drilling
39, " " . . 2 rigs bldg
39, A. A. Richardson, No. 6 400
39, " " 7 100
39, " " 8 . . . . . rig
40, Meldrum Farm Oil Co., No. 14 625
40, " " 15 . . . . rig
40, " " 16 . . . . rig
40, B. F. Palmer & Moore & Thorp, No. 10, fishing 1260
40, B. F. Palmer & Moore & Thorp 11. . 700
40, " " 12. . rig
40, " " 13. . rig
40, " " 14. . rig
40, " " 15. . rig
40, " " 16. . rig
40, W. H. Palmer, No 3. 1000
40, " 4. 150
40, Steele & Booth, No. 5 . . . . . rig bldg
40, " 6 750
40, " 9 350
40, " 10 . . . . . rig bldg
40, Anderson & Humphrey, No. 6. . . . drill
40, McCalmont Oil Co. . . . . 5 drilling
40, " . . . . . 5 rigs
40, Smith & Zeigler, No. 10 300
40, " 11 350
40, " . . . . . 4 rigs
46, J. G. Williams & Reed . . . 2 rigs bldg
46, Clark & Davis . . . . . rig
46, Palmer & Thynge . . . . . rig bldg
46, Weiser Bros. & Forman 400
46, " . . . . . rig
46, " . . . . . rig bldg
46, Bowers & Rowell, No. 2 . . . . . sand
46, " 3 . . . . . rig
47, A. J. Thompson, No. 2 150
47, " 3 400
47, " 9 . . . . . sand
47, " B 700
47, " E 700
47, " F . . . . . rig
47, " I . . . . . rig bldg
47, " J . . . . . rig
47, Hefferman & Hanley, No. 5. . . . . rig
47, " 14. . drilling
47, " 15. . . . rig
47, " 19. . . . rig
47, Knox & Canfield, No. 3. 450
47, " . . . . drilling
47, " . . . . . rig bldg
47, Brawley Bros. . . . . rig
47, Anderson Bros., Greenlee & Russell, No. 3. 300
47, Anderson Bros., Greenlee & Russell, No. 4. 100
47, J. Varney, No. 12. 600
47, " 13. 600
47, " 14. 100
47, " 15. 100
47, " 16. . . . . rig
47, " 17. . . . . rig bldg
47, Clarion Oil Co., No. 7. 300
47, " 8. . . . . rig
47, " 9. . . . . rig
47, " 11. 100
47, " 12 . . . . . sand
47, " 17. 150
47, " 18. . . . . rig bldg
47, " 19. . . . . rig bldg
47, Manhattan Oil Co., No. 7. 300
47, " 6. 400
47, " . . . . . rig
47, " . . . . . rig bldg
48, Wallace, Matson & Thompson. . . . 800
48, " . . . . rig
48, McCalmont Oil Co 1100
48, " . . . . . rig
48, A. W. Nelson & Co., No. 5 100
48, " 10 . . . . . rig
48, Bronson, Kiley & Co., 7 . . . . . rig
48, Steele, Plummer & Co., 4 250
48, " 5 . . . . . rig
48, " 6 . . . . rig bldg
48, Richardson Oil Co., 7 300
48, " 8 . . . . . rig
48, Brawley Bros. 8 . . . . . rig
48, K. B. Crane 300
50, Workman, Gaskell & Scoville . . . . rig
52, Eldridge & Co . . . . . drilling
54, A. L. Kean . . . . . rig
55, Whitney & Good 800
55, " . . . . . 2 rigs
55, " . . . . . 2 rigs bldg
55, A. J. Thompson, 4 . . . . . rig
55, " 5 . . . . . rig
55, " 8 200
55, " 9 500
55, McCrackin Bros. & Gleason. 300
55, " 200
55, " . . . . . rig
55, " . . . rig bldg
55, Stock & Keller, 5 500
55, " 6 200
55, " 7 . . . . . rig bldg
55, J. C. Lineman & Beck, 3 . . . . . rig
55, Stewart & McDonald 550
55, Morton & Kinkaid . . . . . rig
55, Columbia Oil Co 500
55, " 450
55, " . . . . . fishing 300
55, " 200
55, " . . . . . 2 rigs bldg
56, Showalter & Co., 9 500
56, " 10. 500
56, I. L. & W. P. Haldeman, 3 600
56, " 5 . . . . . rig
56, " 7 200
56, " 8 200
56, Hamlon & Rose, 9 600
56, McCalmont Oil Co., 6 . . . . . drill
62, Book & Rhodes . . . . . rig
63, Ramsey 800
63, H. F. Northrup & Co . . . . . rig
64, Columbia Oil Co., 3 800
64, " 350
64, " . . . . . rig
64, Howe & Thompson, 12. 800
63, " 13. . . . . rig
65, " 14. . . . . rig
64, " 15. . . . . rig
64, " 16. . . . . rig bldg
64, H. J. Watson & Co., 16 . . . . . sand
64, " 21 350
64, " 22 200
64, " 23 . . . . . rig
64, " 24 . . . . . rig
64, " 25 . . . . . rig bldg

Drilling 132
Rigs 136

Total 268

GENESEE.

Lot 7, J. G. Haymaker 1000
7, " . . . . . rig bldg
7, H. & W. Weiser, No. 2 1000
7, " 3 . . . . . rig
7, Genesee Oil Co., No. 3 . . . . . drilling
7, McCormick & McManus . . . . . rig
7, I. E. Dean, No. 3 200
7, " 4 300
7, " 5 . . . . . rig
8, J. C. Smith & Son, No. 9, fishing . . 450
8, " " 11 250
8, Reid & Kervin 450
8, " 1000
8, H. J. Morton & Co., No. 16 . . . . . sand
8, " " 21 300
8, " " 22 300
8, " " 23 . . . . . rig
8, " " 24 . . . . . rig
8, " " 25 . . . rig bldg
8, F. E. Boden & Co., No. 22, shut down, sand
8, " " 23 . . . . . sand
8, " " . . . . . 4 rigs
8, St. Joe Oil Co., No. 1 200
8, " 4 . . . . . rig bldg
8, " 6 300
14, Reid & Kervin, fishing 1000
16, Wilson Bros . . . . . rig
16, R. H. Boughton, No. 4 600
16, " 5 . . . . . rig bldg
16, Taylor, Hill & Smith 600
16, Morrison & Bennett 400
16, " " . . . . . rig
16, " " . . . . . rig bldg
16, G. S. Bussell, No. 5 . . . . . rig bldg
16, Carlin Bros. & Golden, No. 4 700
16, " " 5 & 6, rig bldg
16, A. L. Lineman 450
16, A. P. Tanner, fishing 800
16, " . . . . . rig
16, Vandergriff & Miller, No. 5 100
16, D. W. Canfield 700
16, " 200
16, " . . . . . rig bldg
16, Daggett Farm Oil Co., No. 14 400
16, " " 15 200
21, Wells & Cassidy 500
21, Willets & Cronston . . . . . rig
24, A. J. Gartland . . . . . rig
24, Yocum, St. Clair & Co . . . . . rig
24, Lockwood & Wood . . . . . rig bldg
29, Willets & Cranston . . . . . rig

Drilling 29
Rigs 26

Total 55

CLARKSVILLE.

Lot 1, Knox Bros., No. 2 . . . . . rig
1, " 3 . . . . . rig
9, Blyston & Co., No. 2 . . . . . rig
9, H. H. Argue & Co., No. 2 . . . rig bldg
9, Meal Ticket Oil Co., No. 2 . . . . . rig
9, Empire Gas Co . . . . . 2 rigs
9–17, Captain Brett, fishing 1009
9–17, " No. 3 . . . . . rig
9–17, " 4 . . . . . rig bldg
10, Smith & Gleason . . . . . rig bldg
17, N. C. Clark 300
17, Ege Oil Co 100
17, Huston & McKelvy . . . . . rig bldg
18, R. W. Evans . . . . . sand
18, Barton, Hammond & Warner 300
19, Pratt & Fink . . . . . rig bldg

Drilling 5
Rigs 12

Total 17

MISCELLANEOUS.

Pixley Hill, Hakes farm, Root & Willets. . . rig
Independence, J. M. Parker . . . . . rig
Wellsville, Empire Gas Co. 400
Delanti, Stockton Oil Co . . . . . rig
Germania, Germania Oil Co 300
W. O. Gull, Empire Gas Co . . . . . drill

Drilling 3
Rigs 3

Total . . . . . .

BRADFORD FIELD.

TUNA VALLEY.

Clark estate, Boggs & Curtis 800
Scott purchase, Abbott & McGinnis . . . . . rig
Welsh, Colonel Gardner . . . . . rig
Leonard, Allen . . . . . rig
McClure, McClure & Co. . . . . rig

EAST BRANCH.

Coburn, Burroughs & Hazelton, No. 5 . . . 800
" " " 6 . . . rig
E. T. Co., Enterprise Transit Co., No. 33 . . 250
" " " 34 . . rig
Hawkins, P. C. L. & P. Co. & P. T. Kennedy, 11 . . . . . rig
Jewett, Quintuple Oil Co., No. 11 . . . . . rig
Salem, " " 11 . . . . . rig
J. Degolier " " 13 . . . . . rig
Clapp, J. M. Clapp . . . . . rig
Shady, Watson & Fulton, No. 4. . . . . rig
B. I. Taylor, Bovaird & Seyfang . . . . . rig
" Breckinridge & Harper . . . rig
Newell, J. S. Book & Co., No. 15 . . . . . rig
Curtis, American Oil Co., No. 15 400
D. DeGolier, Emery Oil Co., 12 300
" " " 13 . . . . . rig
Tibbetts, " 4 800
" " 5 . . . . . rig
Deitter, " 17 600
" " 18 100
" " 19 . . . . rig bldg
Morris, " 37 250
" " 38 . . . . rig bldg
" " . . . . . 3 rigs
Turner, Blackmarr & Bell 150
A. Watrous, Gilbert, Shipman & Co. . . . . rig
Ingoldsby, Albert DeGolier . . . . . rig
A. Brown, Jasper Morris, No. 2 . . . . . rig bldg
Gregg, Robert Gregg 250

WEST BRANCH.

Emery, O. G. Emery 700
King, W. C. Kronce . . . . . rig bldg
Charles, unknown parties . . . . . rig bldg
Chattell, J. Lewis and others . . . . . rig bldg
Stinson, J. G. Williams . . . . . rig
Cranmer, Chapin & Co . . . . . rig

Drilling 12
Rigs 30

Total 42

THE QUINTUPLE TRACT.

Lot 14, J. S. Wilson, No. 3 200
25, " 2 . . . . . rig
64, B. F. Brinton 2 150
103, Geo. Woodard 2 1300
111, Gardner & Healey, 2 1450
111, " " 3 . . . . . rig
153, E. Strong & Co., 50 250
156, Chemung Oil Co., 9 . . . . . rig
166, E. Strong & Co., 49 200
167, " " 45 . . . . . rig
175, D. Atwater & Co. . . . . rig
176, H. A. Booth & Bro. . . . . rig
197, A. F. Heald & Co. 200
203, Butler & Martin . . . . . rig
208, Petroleum Centre Oil Co. . . . . rig
212, Kane City Oil Co. 1500
226, George McCullagh 1000
232, J. A. Wing & Co., 3 . . . . . sand
233, " 3 1400
238, Shearman Bros., 2 400
Lot 242, Asher Brown, 3 200
256, Berry & Kelley 600
258, Burrows & Co., 5 . . . . . rig
260, Conover, Kelley & Co. . . . . rig
271, Eaten & Bundy, 4 600

Drilling 15
Rigs 10

Total 25

KENDALL CREEK.

Monroe, E. Simpson . . . . . sand
Bingham, Mina Oil Co. . . . . rig
" Trio Oil Co., 7 . . . . . sand
Shed, John Hill, 5 1150
Turner, W. D. Janes, 3 150
Klibury, Williams & Kilbury 760
Richardson, Peck & Freeman, 4 . . . . . sand
" " " 5 100
" " " 6. . . . . rig bldg
Dolloph, " 2 . . . . . sand
Davis, E. Crawford . . . . . rig
" H. J. Hammond, 4 100
" Parker . . . . . rig
F. A. Moore, Martin & Gillespie, 5 250
" Huff & Ege, 8 500
Buchanan, Anchor Petroleum Co., 16 650
Melvin, P. C. L. & P. Co., 3 rigs 800
Richardson, James Smith 150

Drilling 14
Rigs 7

Total 21

FOSTER BROOK.

C., B. & H., lot 25, Treat & Porterfield, 6 . . 150
" " 31, " . . . rig
" Hugus & Young, No. 4 . rig
" " 31, Vandergrift & Miller, 3 . sand
" " 33, Steele & Weir, 2 550
" Hardwood Oil Co., 5 . . sand
" Ralph Bros., 2 . . . . . sand
" " 3 . . . . . rig
" L. W. Eighmey, 11 . . . 300
" Argue Bros. & Cobb, 16 . 1350
" " " 17. rig bldg
" Burns & Monroe 200
" Porter & Gilmore, 13 . . rig
" " 14 . . rig
" A. J. Coldron, 37 400
" lot 25, Seiple Bros. & Co., 5 . . rig
Borden, Howe Bros., 6 900
" lot 77, Geo. V. Forman, 14 300
" " " 15 . . . . . rig
McMurray, Hatfield & Henn . . . . . rig
Bradley, Clinton & Foster 750
Willetts, O. Smith Oil Co., 8 . . . . . rig
" Willetts & Young . . . . . 3 rigs

SUMMIT, MARION AND RIXFORD.

Berger, Brownyear, Martin & Co., No. 3 . . 100
Mather, C. B. Whitehead . . . . . rig
Irons, Duke Center Gas Co. . . . . rig
Dodge, Daniel Clark . . . . . rig
Schoonover, Schoonover Bros. & Baker . . . sand
Allen, Shakely & Wall 1200
Borden, Urquhart, Wallace & Lavens, No. 3 . 150
" Shear Bros. & Braunschweiger, 12 . sand
" " " 13 . rig
Book pur., Hazelwood Oil Co., No. 41 . . . 500
" " " 42 . . . 100
" " " 43 . . . 100
" " " 44 . rig bldg
" " " 45 . rig bldg

Drilling 20
Rigs 19

Total 39

STATE LINE AND OIL VALLEY.

Fullerton, Angell Oil Co., No. 25 750
" " 26 1000
" " 27 . . . . . rig
" " 28 700
A. O. Co., " 29 . . . . . rig
" " 30 . . . . . rig
" " 31 . . . . . sand
" " 32 . . . . . rig
" " . . . . . 4 rigs
" Jones & Smith . . . . . rig
Borden, Johnson & Co., No. 8. 1350
" Fertig & Henne, 20 500
" " 21 450
" Forman & Lawton, 10 200
" " 13 . . . . . rig
" " 14 . . . . . 2 rigs
Charles Duke, Charles Duke . . . . . rig
Hamlin, J. B. Daniels & Co., 17. . . . . rig
Smith & Jones, rig 600

Drilling 9
Rigs 14

Total 23

INDIAN CREEK.

Shattuck, Eaton & Howe. 800
" " . . . . . rig
Gale, Moore & Watson, No. 5. . . . . rig
Dodge, Frank Hardwick . . . . . rig
Pine Lot, Evans Bros. . . . . rig
H. Loup, Sloan & Downing 3. 400
" Globe Oil Co. 4. 1500
M. Loup, Hart & Hicks 21 . . . . . rig
" Jas. O'Niel, 9. 1500
" " 10. . . . . rig
" " 11. . . . . rig
" Follet Bros . . . . . 4 rigs
Hamlin, Forest Oil Co. 33. 600
Barse, Geo. V. Forman . . . . . rig bldg . . 900
" Lot 154, Jos. Stettheimer 4. . . . . sand
" 188, J. D. Downing & Co . . . . rig
Keyes, Indian Creek Oil Co. 750
Campbell, Follett . . . . . 3 rigs

Drilling 8
Rigs 15

Total. 23

MEEK'S CREEK.

Haymaker, Gailey Bros. . . . . rig
Gale, Curtis & Taylor, No. 6 . . . . . rig

FOUR MILE.

Rock City, Quartette Oil Co., No. 22 1450
" " 23 . . . . rig
Lippert, Griffin & Howard, No. 10 800
" " . . . . . rig
J. Moulthros, Moulthros Bros., No. 10 . . . rig
Bucher, Wm. Bucher. . . . . rig
Harbell, Bell Bros. & Coleman, No. 12 . . . sand
Jos. Waters, Howard & Baum 13. . . . . sand
" Chas. Gillespie. . . . . rig
Baum pur., Waco Oil Co. . . . . 4 rigs
Chamberlain, Henry Chamberlain 2. . . . . sand
" " 3. . . . . rig
Van Campen, Lot 87, Geo. Van Campen . . . rig
" 49, R. W. Evans, lot 27 . . 1100
McCartney, G. W. Funk, No. 3 . . . . . rig
Donahugh, Brown & Norris. . . . . rig
Stevens, Book & Rhodes. 200

KINZUA.

U. O. Co. pur., Union Oil Co., No. 34. . . . 750
C. P. H. pur., Cornwall, Parker & Co., No. 35. 100
C. & H. pur., Carter & Hurd, No. 12. 450
" " 13. . . . . rig
" " 14. . . . . rig
Bingham, Lot 136, J. M. & T. Tait, No. 6. . rig
" 135, J. M. Tait, No. 10. . . . rig
U. O. Co., Lot 9, W. J. Wood. . . . . rig
" 9, " . . . . . rig bldg
Turnup Run, War. 2256, U. A. Andrews. . . . 400
" 2256, Bennett & Mullen. . 1500

SUGAR RUN AND KINZUA.

Richardson, Chapin & Co., No. 3. . . . . rig
" Wright & DeGolier. 1300
Corydon, Lot 13, Duke & Harris, shut down . sand
Chapel Fork, Brown & Co . . . . . rig
Jamieson, H. A. Jamieson . . . . . drill
" " . . . . . rig
Campbell, Gilbert. . . . . rig
Dew Drop, Vanscoy . . . . . rig bldg

MISCELLANEOUS.

Prentiss Mills, A. Prentiss . . . . . sand

Drilling 16
Rigs 26

Total 42

COLE CREEK AND BINGHAM.

Bordell, Short Oil Co. 500
Brown & Kellar, E. Duthill 500
Moore, Geo. V. Forman, shut down 1700
Painter, Union Oil Co., No. 16 650
G. & Van V. pur., Union Oil Co., No. 15 . . rig
" " 16 . . 500
" " 17 . . 1800
" " 25 . . rig
" " 26 . . rig
M. W. & H., 600 acres, W. W. Thompson, 8 rig
" " " 9 rig
Lot 394, P. T. & W. C. Kennedy, No. 8 . rig bldg
450, Bayne, Fuller & Co., 45 . . 500
405, Forest Oil Co., 7 . . 850
405, " 8 . . 300
405, " 9 . . rig
407, Bennett & Quick, 18 . . rig
404, " 17 . . rig
409, J. L. McKinney & Co., 10 . . rig
439, " 21..rig bdg
406, " 4 . . 1450
416, Lee & Apple, 5 . . 200
416, " 6 . . rig
416, " 7 . . rig
488, Johnson & Co. & U. O. Co., 25 b . 1600
493, " " 30 b . 1600
493, " " 38 b . rig
492, " " 39 b . rig
492, " " 40 b . rig
492, " " 41 b . 1400
492, " " 42 b . 1100
491, Forman & The Union Oil Co., 9 . . sand
491, " " 10 . . sand
491, " " 11 . . 250
491, " " 12 . . rig
417, " " 16 . . 1100
417, " " 17 . . rig
417, " 18 . . rig

Bingham, George V. Forman, No. 20 1350
" " " 21 . . . . rig
Simpson, " " 12 . . . . rig
Forman, " " 3 . . . . sand
" " " 4 1250

Drills 22
Rigs 21

Total 43

BIG SHANTY.

Lewis Run, C. S. Whitney & Son, shut down . 1200
Dent Lands, Dent Oil Co., No. 17 409
" P. C. L. & P. Co., 26 1500
" " " 27 800
" " " 28 600
" " . . . . . 3 rigs
" Whitney & Wheeler, No. 12 . . 450
" " . . . . . 4 rigs
N. W. M. Co., lot 92, The Union Oil Co., No. 17 . . . . . rig bldg
York, Book & Whitney, No. 4 850
" " 6 . . . . . rig bldg
Sullivan, J. M. Tait, 4 . . . . . sand
" " 5 . . . . . rig
" Mullen, Mills & Boden, 8 600
" " " . . . . . rig
" " " . . . . . rig bldg
" Waugh & Porter, 4 1500
Bingham, Lot 151, Geo. V. Forman, 8 . . . rig
" 176, Fertig & Henne, 7 . . . 900
" 176, " 8 . . . 400
" 176, " 9 . . . rig
" 179, Eaton & Cumulative Co., 8 500
" 180, Hamlin & Rose, 3 . . . . sand
" 180, " 4 1000
" 180, " 5 . . . . rig
Moody, Jennings & Co., 4 . . . . . rig
" Minard Run Oil Co., 84 1650
" " " 86 1600
" " " 87 600
" " " 88 . . . . . rig
" " " 89 . . . . rig bldg

Drilling 18
Rigs 18

Total 36

THE WARREN FIELD.

STONEHAM.

Baldensperger, Davis, Hertzel & Nesmith, No. 7 . . . . . rig bldg
Lot 77, Wynkoop . . . . . rig
79, M. H. Butler, No. 3 . . . . . rig bldg
78, David Beatty & Son, No. 18 . . . . rig
78, " " 19 . . . . rig
79, Anchor Petroleum Co . . . . . rig
80, May & Groves, No 3 . . . . . rig

CLARENDON.

Lot 80, Thomas Murphy, No. 2 300
80, " 3 . . . . . rig
80, T. N. Barnsdall, 4 250
80, Winsor Bros., 10 200
80, " 11 . . . . . rig
80, Thayer & Crosby, 4 200
105, D. W. Brinton & Co., 3 600
105, Fisher & Weaver, 4 . . . . . rig
105, Short, Oyster & Co., 4 150
106, Archibald & McClure, 4 . . . . . rig
100, Alexander Lowery, 2 200
106, H. P. Malone . . . . . rig
106, " . . . . . rig
108, Weaver, Duke Centre Oil Co. . . . . rig
108, Grandin & Hague . . . . . rig
108, Duke & Harris . . . . . rig
109, Little Toby Oil Co . . . . . sand
495, E. Katz . . . . . rig
497, F. W. Pratt & Co., No. 5 400
497, " " 3 . . . . . rig
498, Porter & Topper 1000
498, Stoughton & Cole, No. 2 . . . . . drilling
498, New Hope Oil Co., 3 250
498, George Givens, 4 . . . . . drilling
498, " 5 . . . . . rig
498, S. Waters, 3 . . . . . rig
498, Hopewell, Payne & Co., No. 2 900
498, " " 3 . . . . rig
498, Conway & Gandy, 3 . . . . . rig
398, E. N. Smith & Co . . . . . drill
498, I. Conrath, No. 2 800
498, " 3 300
498, " 4 100
498, Wm. Hopewell, 5 . . . . . rig bldg
499, Grosh, Hamsher & Co., No. 1 . . . . sand
527, F. H. Rockwell & Co., 2 . . . . sand
527, " " 3 . . . . rig
527, " " 4 . . . . rig
528, Munn, Nickels & Co., No. 3 402
528, Zeitle & Co., No. 4 . . . . . rig bldg
558, Drake & Beaumont 500
528, Speer & Armstrong, No. 9 . . . . sand
528, " " 10 . . . . rig
528, Borcher & Co., No. 2 . . . . . drilling
529, Jamestown Oil Co., 2 1000
Lot 529, Leake Bros. . . . . rig bldg
530, Wilber & Co . . . . . rig
530, O. F. Schonblom & Co. No. 2 . . . 700
530, Ralph Bros 500
530, Bickner & Gilder, No. 1 . . . rig bldg
530, Bradenbaugh & Schwabenbauer, No. 3 . . . . . rig bldg
586, C. A. & D. Cornen 600
557, E. B. Barton . . . . . sand
557, Bryan, Hopkins & Co., No. 3 . . . 750
557, " " 5 . . . 450
556, Conrath, Wright & Co., 2 . . . 250
556, " " 3 . . . rig
556, Siggins & Co., No. 1 250
Bugbee, John Bryan . . . . . rig

CHERRY GROVE.

Lot 611, W. P. Book & Co . . . . . drilling
619, M. Murphy 350
646, Jamestown Oil Co., No. 1 . . . . sand
646, " " 2 . . . rig
618, " " . . . rig bldg
659, " " . . . rig bldg
635, J. A. Cadwallader & Co . . . drilling
647, " " . . . drilling
647, " " . . . rig bldg
659, " " . . . drilling

GLADE DISTRICT.

Clark, J. Clark . . . . . rig bldg
Holt, Chas. Townsend . . . . . rig bldg
Nesmyth, Benj. Nesmyth . . . . . drilling
Watson, Brown Bros . . . . . drilling
Kings Run, Marsh & Brown . . . . . drilling
Hoffman, Hopewell & Waters . . . . . rig
Asylum lot, H. A Jamieson . . . . . rig
Brewery lot, John Bell . . . . . rig bldg

SHEFFIELD.

Lot 368, Magee & Horton, Dickinson farm . . rig
396, Horton, Crary & Co., No. 4 1000
396, " " 5 . . . . rig
408, Wetmore, Howe & Co., 8 . . . . . sand
408, " " 9 1000
408, " " 10 . . . . rig
408, " " 11 . . . rig bldg
408, Donaldson, McGee & Horton, No. 10, rig
408, Donaldson, McGee & Horton, No. 11, rig
438, Emerson, Shank & Co 350
212, Truby & Co . . . . . rig
Williamson, J. L. McKinney & Emery . . . sand
Henry's Mills, H. B. Porter . . . . . sand

FOREST COUNTY.

Tract 2730, Reno Oil Co . . . . . rig
Lot 41, Manwaring & Co. . . . . drilling
Cooper tract, Blue Jay Oil Co. . . . . rig
Cook tract, " . . . . . rig
Stewart tract, " . . . . . rig
Forest tract, " . . . . . rig
No. 5211, Tionesta Oil Co. 400
Bear Creek, John Cornwall, fishing 1750

Drilling 51
Rigs 54

Total 105

LOWER COUNTRY.

CLARION.

Fox, Farr & Co., No. 2 200
Call, Butler & Smith, fishing 600
H. Black, R. R. Snyder 150
Updegraff, Jenerette & Co 750
J. H. Alt, Morey Bros. & Co 650

BYROM CENTER.

Sloan, Duncan & Dodd 500
N. Kohlmyer, Swan, Dean & Co 600
Anderson, Daniels & Dougherty 500
" Thomas Hays . . . . . rig
Say, J. P. Crawford 800
Sedgwick Mills, Trout Run Oil Co . . . . fishing
D. M. Crawford, Rowley, Graham & Co . . fishing
Six Points, Grant Bros. & Co 100
Thompson, W. R. Thompson 500
Crawford, E. Crawford & Co., No. 2 . . . 200

VENANGO.

Bannen, Wolf & Kugler . . . . . drill
Tract 47, Fisher Bros. . . . . rig
Gates, Fisher & Co. . . . . drill
Frenchburg, Oscar Wilde Oil Co. . . . . drill
Gailey, Kugler & Co., No. 5 230

BUTLER AND ARMSTRONG.

Stewart, Cornplanter Oil Co. 1200
Scott, A. Crittenden & Co. . . . . rig
Fleeger, Hyland & Co 600
Myers, W. H. Hoffman & Co. 1100
Horks, Davis Bros. 350
Byers, Hollobaugh & Simcox 200
Hoffman & Pierson, Bald Ridge Oil Co . . . rig
John Weber, " . . . rig
Mohood, " . . . rig
Shorts, " . . . rig
Herbert, " . . . rig
Weber, Peter Smick . . . . . rig
" A. Scheidemantel . . . . . rig
Miller, McConnell & Co. . . . . rig
Renfrew, Phillips Bros. . . . . 2 rigs
McCormick, " . . . . . rig
Kellerbaugh, Simcox & Myers. . . . . rig
Renfrew, " . . . . . rig
Wm. Brown, Union Oil Co . . . . . rig
Reibolt, Philadelphia Oil Co. . . . . rig
McKee, unknown. . . . . 2 rigs

Drilling 23
Rigs. 20

Total 43

SUMMARY.

Wells Completed.

BRADFORD FIELD.

Section.	No. of Wells.	Barrels.	Average.	Dry.
Tuna Valley, East Branch, West Branch	23	253	11	1
Quintuple Tract	11	215	12⅝	
Kendall Creek, Foster Brook, Summit, Marion and Rixford, State Line Oil Valley, Meek's Creek, Four Mile, Kinzua, Sugar Run	65	875	13½	1
Big Shanty	..	..	..	..
Cole Crk. & Bingham	27	445	16½	1
TOTALS	132	1,788	13½	3

WARREN FIELD.

	No. of Wells.	Barrels.	Average.	Dry.
Stoneham, Clarendon, Sheffield, Glade, Forest Co.	40	496	12⅓	1

LOWER FIELD.

Clarion, Byron Centre, Venango, Butler & Armstrong.	20	87	4¼	9

ALLEGANY FIELD.

Scio, Alma	25	384	15½	1
Wirt	38	763	20	3
Bolivar	167	4,647	27⅞	2
Genesee	27	562	20¾	..
TOTALS	257	6,356	24¾	6
" Lower Field	20	87	4¼	9
" Warren	40	496	12⅓	1
" Bradford	132	1,788	13⅓	3
GRAND TOTALS	449	8,727	19½	19

Drilling Wells.

ALLEGANY FIELD.

	Drill.	Rigs.	Total.
Scio	2	6	8
Alma	33	29	62
Wirt	22	18	40
Bolivar	132	136	268
Genesee	29	29	55
Clarksville	5	12	17
Miscellaneous	3	3	6
TOTALS	226	230	456

BRADFORD FIELD.

Tuna, East Branch, West Branch	12	30	42
Quintuple	15	10	25
Kendall	14	7	21
Foster Brook, Summit and Rixford	20	19	39
State Line Oil 2	9	14	23
Indian Creek	8	15	23
Meek's, Four Mile, Kinzua, Sugar Run, Miscellaneous	16	26	42
Cole Creek	22	21	43
Big Shanty	18	18	36
TOTALS	134	160	294
Warren Field	51	54	105
Lower Country	23	20	43
Allegany	226	230	456
GRAND TOTALS	434	464	898

THE OIL SITUATION.

THE situation so far as the relative position of production and consumption is concerned, has not changed materially from last month. It is true the condition of the producing fields is not as encouraging as it was two months ago. The developments in Warren County, and also in Butler, have enshrouded the future with grave aspects. As to the probability of the territory becoming circumscribed immediately, there seems, at first sight, to be some room for doubt. While the Warren County district does not promise enormous supplies, such as were obtained in Bradford and Allegany, yet it assures a fair increase, though it will, in all probability, be quite slow in coming. At present, however, it is impossible to calculate its future possibilities with any degree of certainty, owing to the peculiar variety of the oil strata. Were all the wells in all sections of the district producing from the same source or stratum, the danger of the existence of large stores would be very much enhanced. As it is, however, we find, according to the most reliable data, that the three important divisions, viz.: Clarendon, Sheffield, and "646," are yielding oil from vastly varying depths. For instance: the Clarendon rock is found 1,067 feet below the surface, or 325 feet above tide; the Sheffield formation lies 350 feet below that of Clarendon, and at 646 it is said to lie 150 feet below the Clarendon drift. And what seems the most strange in the circumstance is the fact that in neither case is the oil stratum of the other found; at least, if found, it is entirely barren of oil. So that in the calculation or estimation of the future, three distinct pools, or belts, or whatsoever they are termed, must be considered. It would seem utter folly to undertake to form a uniting link between either two of them. Gas, and nothing else, is found in the Clarendon section at the level of 646, and the same is true of the formation at Sheffield. Connecting links, therefore, between Clarendon and 646, or the latter and Sheffield, would seem to be out of the question. However, a large number of pools, as stated on former occasions, are liable to be found, even outside of those already unearthed. Three months ago the AGE made calculations for these, and therefore has nothing of a startling nature to offer in this direction. Doubtless the daily yield of this district will continue to increase for some time. It may have a 15,000-barrel production, per day, ahead of it, but ere that hour is reached there are strong possibilities that room will be made for it by the decline of the other districts north.

The fact is recognized, moreover, that Allegany has overstepped the bounds of all estimates made of its progress and capabilities to produce. During April it gave us 257 new wells, only three of which were denominated dusters. The daily average yield for the month sprang up from 15,000 in March to 18,500 for April. Then in order that this average could be maintained the yield on the last day of the month could not have been less than 20,000 barrels. This enormous result was attained, of course, through excessive drilling on the richest portions of the field. And, to add still further to the extraordinary results, much of the territory along the southern edge of the pool, east of Bolivar, proved far richer in oil than the most sanguine had anticipated. The outlines, however, as set by the AGE map in the March number, have not as yet been materially changed. A small *bump* should be placed on the color at the northeast corner of lot 17, Clarksville, which should cover a portion of lot 18, as some fair wells are being obtained north of the old Parkman Well. This is the only exception to the rule laid down in March. Therefore, while the field has been developed with great rapidity, and the daily yield enlarged with remarkable haste, there would appear but one alternative: the field is destined to be completely drilled within a few months. The question as to the probability of a still further augmentation of the total production there, meanwhile, stares the trade in the face, and is one difficult of solution. It will require the drilling of from 2,000 to 2,500 wells to complete the list of the field, and as yet there are only 1,300 producing, about one-half the total number. The solution of the question could therefore be obtained only through correct data regarding the shrinkage of the old wells. As the area does not enlarge, it is but reasonable to suggest that the drilling of the outskirts will not suffice to maintain the aggregate after a half or two-thirds of the territory has been bored full of holes.

The old wells, furthermore, have disappointed even their owners in the manner in which they have sustained their daily yield. It was asserted by many that the rock was of that character that would not and could not admit of long life—that the wells would decline in great haste after a few months' duration. This was ascertained to have been a miscalculation; the wells exhibit as efficient *staying* qualities as those of any other

district. But with another year's AGE this state of things may be entirely changed.

While the April deductions are larger than anticipated, yet the only change they produce is in hastening production for the time being. There is about so much oil, and no more, to be removed from Allegany and Bradford, whose lines are set with considerable certainty. What April, May and June perform in this direction will not have to be done by the months that follow. So that the aspect is quite as clear as it has been for some time. It matters not whether production rises or falls, there is one thing the trade must remember and that is, that consumption goes only one way—always upward.

LIGHTNING AND THUNDER IN THE OIL COUNTRY.

MR. A. K. Knudson, of New-York, has made valuable investigations in the field of atmospheric electricity, and recently spoke to a reporter as follows: In this country public attention has been called to the immense amount of property destroyed in the past three or four years by lightning exploding oil tanks in the oil regions. In the summer of 1876 over 10,000,000 gallons of oil were destroyed, and on April 19th, 1877, over 2,000,000 gallons of oil and the village of Troutman, Pa., were destroyed, all owing to lightning. During the summer of 1880 the number of fires in the oil regions due to lightning were unusally large, the total losses footing up over $2,000,000. On the morning of June 11th, lightning struck and ignited a tank at Titusville, Pa., resulting in a fire, lasting two days and nights; the loss from this one fire amounting to over $1,500,000. On August 20th, at Dallas City, two 25,000-barrel tanks were ignited by lightning and contents consumed; loss, $40,000. During a storm on the night of August 28th, 1880, no less than fifteen oil tanks were ignited and destroyed, causing an immense loss. We do not propose to go over the whole list as it would probably take a whole evening, but enough has been said to show the necessity of some reliable method for protection.

Mr. Knudson referred to the great frequency of thunder storms in the oil regions, and explained it upon the theory of the geographical location of the country, which, he said, being in the western part of the State, with Lake Erie on its northwestern boundary, was in the direct track of all storms coming from the lake and traveling in a southeastern direction, which is the usual course taken by the large number of storms formed over that body of water. Mr. Knudson then proceeded to illustrate the construction of oil tanks and the action of induction on a tank equipped with an insulated wire. This experiment went to show the very slight protection afforded against lightning by insulation. Mr. Knudson suspended an artificial thunder cloud above an imaginary tank, and whether lightning issued from the cloud or no sparks of electricity were seen to play between the rod and the tank, which was explained by the fact that in the presence of a thunder cloud if the lightning rod was charged with positive electricity, the tank would then be negative, and the sparks would jump from one to the other. A second experiment showed how gas was ignited from the inside of the tank by electricity, and a third exhibited the method of protection invented by Mr. Knudson. We have previously referred to this system, but for the benefit of those of our readers who are not familiar with it, we subjoin the following description: "Instead of the chain by which the swing pipe is usually raised or lowered, and which is fastened to the top of the tank, he substitutes a wire rope. This, when properly connected, makes a good conductor and avoids sparks from any chance discharges that may occur through this channel. In order to carry off the electric fluid without passing it through the tank, he erects rods of ample conducting surface over the tanks, and connects them with a terminus, which shall always afford perfect connection with the earth. Another important feature of the system is the moistening of the air about the tanks, which can readily be accomplished in the neighborhood of refineries and pumping stations.

EXPORT OIL TRADE.

	1882.	1881.
From Boston . . . . . galls.	2,243,736	2,915,851
Philadelphia . . . . . "	24,232,574	12,076,704
Baltimore . . . . . "	3,701,281	2,985,965
Richmond . . . . . "	151,982	128,412
Total galls.	30,329,573	20,106,932
From New-York	124,685,100	89,046,799
Total Exports from United States .	155,014,673	109,153,731

THIS shows a balance in favor of the first four months of the present year over same time last year of 45,861,142 gallons or 1,091,932 barrels. It includes the condition of trade to May 6th, and is very encouraging in face of the fact that the price of refined has been elevated in the face of the demand.

OIL TANK FIRES FROM LIGHTNING.

PROF. Henry Horton, President of Stevens' Institute of Technology, after giving a description to the *Scientific American* of oil storage tanks, and the manner of their construction, gives his opinion of the reason why these large receptacles are so frequently attacked and destroyed by lightning. He says:

"The only safety for such tanks seems to be to disconnect them entirely from the pipe. But it has been claimed that as the swing pipe extends within a few feet of the roof, in case the tank should be struck direct, there might be a spark from the roof to the pipe. Respecting this connection, it may be well to add that, while the iron of the bottom (which is pretty light, being No. 6) hugs the earth very closely, yet a lightning rod, if properly attached, is believed to be of service. During last summer nearly all the tanks under the control of the United Pipe Line were rodded in the following manner:

"The great majority of tanks lost by lightning have been station tanks with pipes running over the roof; but there have been tanks burned where the only pipe connection was through the shell near the bottom, the spark evidently going from the end of the swing pipe.

"Well tanks (of wood, and usually 16 feet in diameter and 8 feet high) are quite frequently destroyed, though not, I think, more frequently in proportion to their number than iron tanks. There is always a 2-inch pipe leading over the top of these tanks and resting against the derrick over the wall. This derrick, being seventy or eighty feet high, is very liable to be struck. The noteworthy point about these fires is that the pipe which leads to the tanks has its other end tightly connected with the tubing and casing in the well, and is thus afforded the most perfect earth connection conceivable. Why is not the tension wholly relieved down the well?

"It has recently been demonstrated that the overflow of a burning tank can be prevented with certainty by shooting it with a 3½-inch gun. About a dozen shots are required to empty the tank. The oil burns rapidly outside the tank, and does not run more than a hundred feet on the level. The only danger is that the tank may burst from the blows of the shot. A plan is now under experiment by which a hole may be cut with a machine operated from a safe distance.

"At the Custer fire the superintendent went completely around within five minutes of the flow, and as far as he could reach the tank was quite cool to the hand. It was at first thought that by pumping water into the tank as rapidly as the oil burned away, and so keep the oil burning in the top ring of sheets, the overflow would be prevented, as no tank had ever made a flow until after the oil had burned below the first ring; but in the three cases tried, it had no success. The theories offered to account for the overflow are chiefly:

"1st. Heating the sides of the tank, causing the oil to boil;

"2d. Currents of air caused by the fire itself; and,

"3d. That as the more volatile parts of the oil burn first, the burning surface will, after a time, become thick enough to seriously impede the flow of gas from the oil beneath; and this obstruction becomes sufficient to permit or cause the accumulation of a quantity of gas, so considerable as, when it is suddenly relieved, to cause the overflow.

"It is certain that the force exerted is very great. At Custer, the flow was made with such vehemence as to extinguish the flames in the tank, and for several minutes the oil left in the tank was not burning—only catching again from the fire outside.

"To shorten the time during which the tank burns, it is usual to 'shoot' it with small cannon or with rifles. Through the hole thus made a considerable quantity of oil escapes, and though the area and intensity of the fire is increased, the time of danger is lessened. (When spurting from holes made by rifle balls, the oil burns with an exceedingly brillant, pure white flame, almost comparable to the electric light.) Another object in shooting is to lessen the overflow by reducing the volume of unburnt oil in the tank.

"One idea of the cause of these fires is that they are owing to the pipe connection; and this is believed, first, for the negative reason that no tank entirely disconnected has ever been fired."

IRON TANKAGE.

DURING April, eleven new iron tanks were constructed throughout the producing region. These were located as follows:

Location.		Owner.	Capacity.
Allentown	1	United Pipe	25,100
Genesee	2	" "	12,200
Colgrove	2	" "	72,900
Olean	4	" "	140,000
Bolivar	1	McCalmont Co.	35,450
Bingham	1	Johnson & Co.	33,850
Totals	11		319,500

STATEMENT made by the United Pipe Lines July 10th, 1880, and enlarged to April 30th, 1882. It gives gross stocks, sediment and surplus, net stocks, outstanding balances, receipts (or runs) from all sources, and total deliveries:

	Gross Stocks.	Sediment and Surplus.	Net Stocks.	Outstanding Acceptances.	Credit Balances.	Receipts from all Sources.	Total Deliveries.
1877—April	1,895,153.71	77,386.70	1,817,767.01	449,640.14	1,368,126.87	200,570.81	125,797.90
May	1,762,602.64	75,363 87	1,687,237.77	663,663.71	1,003,574.06	493,200.58	619,612.26
June	1,596,367.68	81,255.42	1,488,112.26	661,786.57	826,325.69	538,906.95	737,609.77
July	1,482,433.51	81.741.50	1,400,692.01	667,166.36	733,625.65	615,145.46	699,476.18
August	1,489,052.53	81,144.63	1,407,907.90	643,281.46	764,626.44	673,403.04	666,144.28
September	1,339,032.27	67,163.68	1,271,868.59	552,676.26	719,192.33	625,225.37	769,745.57
October	1,434,728.78	46,771.99	1,387,956.79	673,850.05	714,106.74	687,094.59	570,092.71
November	1,691,399.52	39,418.00	1,651,981.52	657,591.36	994,390.16	913,644.19	649,242.70
December	2,830,413.36	68,729.63	2,761,685.73	754,338.25	2,007,347.48	1,656,150.37	506,332.99
1878—January	3,124,641.15	72,453.43	3,052,187.72	864,711.41	2,187,476.31	872,681.18	715,149.78
February	3,439,526.98	82,452.66	3,357,074.32	1,404,292.13	1,952,782.19	1,030,688.44	720,478.14
March	3,940,000.65	92,963.06	3,847,037.59	1,487,430.50	2,359,598.09	1,196,251.26	701,681.27
April	4,335,274.84	133,935.76	4,201,340.08	1,615,791.19	2,585,548.89	1,137,359.40	778,050.53
May	4,609,681.45	150,117.76	4,459,563.69	2,065,333.31	2,394,230.38	1,104,352.40	843,081.33
June	4,719,699.25	181,800.03	4,537,899.22	1,950,420.81	2,587,478.41	1,092,604.02	1,004,474.55
July	4,885,851.72	229,080.78	4,656,770.94	2,078,466.56	2,578,301.38	1,258,648.45	1,108,074.33
August	4,571,658.59	217,085.19	4,354,573.40	2,064,590.75	2,289,982.64	1,195,268.67	1,496,009.04
September	4,410,061.84	225,088.86	4,184,972.88	2,705,853.95	2,479,119.03	1,182,118.57	1,318,265.33
October	4,072,267.43	234,050.89	3,838,576.54	1,517,484.27	2,321,092 27	1,271,174.73	1,564,984.43
November	4,083,972.42	216,655.30	3,867,317.12	1,784,443.35	2,082,873.77	1,159,623.71	1,129,047.42
December	4,098,200.92	201,470.30	3,896,730.62	1,741,311.07	2,155,419.55	972,338.83	924,035.93
1879—January	4,759,031.41	182,707.80	4,576,323.61	2,153,763.83	2,422,559.78	1,231,237.19	546,271.74
February	5,157,646.15	171,689.80	4,985,956.35	2,346,238 22	2,639,718.13	1,055,377.95	643,828.71
March	5,503,768.71	190,797.91	5,312,970.80	2,484,861.83	2,828,088.87	1,363,512.17	1,029,029.70
April	5,885,675.24	211,957.06	5,673,718.18	2,644,301.36	3,029,416.82	1,379,349.76	1,015,482.04
May	6,180,843.53	315,992.98	5,864,850.55	2,522,846.36	3,342,364.19	1,488,514.31	2,228,043.27
June	6,426,802 45	334,457.29	6,992,345.16	2,959,921.12	3,132,424.04	1,437,250.90	1,204,557.54
July	6,419,699.08	323,295.32	6,096,403.76	2,323,575.29	2,772,828.47	1,472,651.01	1,465,518.05
August	6,380,606.63	300,345.15	6,078,261.48	3,581,224.03	2,497,037.45	1,714.620.11	1,728,940.81
September	6,589,859.83	325,363.85	6,264,995.98	3,783,480.38	2,481,015.60	1,691,863.41	1,455,811.45
October	6,701,209.87	299,393.67	6,401,816.20	3,788,155.65	2,613,660.55	1,646,725.06	1,502,991.20
November	6,951,133.67	303,641.17	6,647,492.50	3,927,300.18	2,675,192.32	1,600,961.29	1,328,621.19
December	7,362,409.76	294,571.37	7,067,838.39	4,235 459.40	2,832,378.99	1,771,781.24	1,331,822.12
1880—January	7,735,257.38	295,517.60	7,439,739.78	4,436,788.55	3,002,951.25	1,832,963.04	1,145,194.98
February	8,187,012.49	322,568.93	7,864,443.56	4,602,286.49	3,262,157.07	1,607,663.89	1,178,111.92
March	8,621,097.49	351,130.35	8,969,967.14	4,811,894.33	3,458,072.81	1,815,133.31	1,396,037.88
April	9,662,354.59	388,558.16	9,273,766.43	5,846,536.60	3,427.259.83	1,739,297.37	723,794.73
May	10,306,078.79	454,193.73	9,851,885.06	6,361,320.05	3,490,565.01	1,552,240.91	975,061.26
June	11,266,771.77	477,431.60	10,789,340.08	7,397,131.89	3,392,208.19	1,781,937.29	848,339.08
July	12,039,010.00	475,446.56	11,563,563.44	8,125,241 25	3,438,332.19	1,890,161.44	1,095,528.25
August	12,749,623.28	462,987.28	12,286,636.00	8,635,394.80	4,651,241.20	1,904,452.70	1,177,448.42
September	13,618,276.03	382,398.71	13,236,327.32	9,287,193.94	3,949,133.38	2,075,105.26	1,115,184.71
October	14,020,877.32	391,331.55	13,629,545.84	9,448,615.77	4,180,930.07	1,999,487.98	1,598,285.06
November	14,656,891.55	341,262.67	14,315,628.88	10,038,824.08	4,231,804.80	1,859,991.50	1,064,146.39
December	15,369,758.67	361,184.83	15,008,573.48	10,913,283.49	4,095,290.35	1,987,283.54	1,207,928.35
1881—January	16,291,307.87	360,688.98	15,930,618.89	11,672,583.61	4,258,035.28	1,876,526.50	931,818.71
February	17,355,485.31	391,616.47	16,936,868.84	12,029,594.35	4,934,274.49	1,823,713.46	781,745.93
March	18,488,476.94	432,304.19	18,056,172.75	13,099,262.44	4,956,910.31	2,222,812.39	1,116,695.11
April	19,560,752.23	517,422.38	19,043,329.85	13,846,285.20	5,197,044.65	2,182,636.96	1,183,779.02
May	20,591,177.33	640,662.03	19,950,455.30	14,608,124.70	5,342,330.60	2,278,582.78	1,356,688.23
June	21,397,698.53	756,412.85	20,641,285.68	14,738,828.77	5,902,456.91	2,318,445.18	1,545,448.13
July	21,982,161.42	774,402.94	21,207,758.48	15,150,267.23	6,057,131.25	2,396,472.50	1,756,044.15
August	22,474,105.51	800,343.43	21,673,762.18	15,240,553.15	6,433,209.03	2,527,888.69	2,013,844.67
September	22,727,740.61	820,434.43	21,907,306.18	15,626,283.11	6,281,023.07	2,233,085.37	1,900,251.83
October	23,212,951.99	801,243.43	22,431,708.56	16,408,030.46	6,023,678.10	2,452,428.66	1,803,052.62
November	23,303,782.34	746,980.08	22,556,744.26	16,407,354.48	6,149,389.78	1,995,895.38	1,742,462.86
December	23,862,966.20	775,000.00	23,087,966.20	16,496,380.40	6,234,291.37	2,255,252.50	1,696,068.64
1882—January	24,243,382.26	762,111.53	23,481,270.73	17,788,245.97	5,693,024.76	1,984,325.23	1,547,945.23
February	24,704,933.81	765,000.00	23,939,933.81	18,541,340.52	5,831,402.36	2,062,742.98	1,601,191.43
March	25,663,298.81	887,210.88	24,776,087.93	19,039,760.73	5,736,327.20	2,305,538.30	1,453,354.46
April	26,519,252.22	993,150.92	25,526,101.30	19,963,183.00	5,562,918.30	2,145,965.63	1,381,093.10

THE Southern States are now using three times as much oil as they were two years ago, and the demand enlarges every day.

A FIFTY horse-power boiler blew up at Red Rock on Thursday, the 11th inst., fatally injuring a man named M. D. Thompson. It shook things up in lively order in the vicinity.

IT was reported on Friday, the 12th inst., that The Standard Oil Co. had refused to sell refined oil at the price offered in New-York. As it would be a difficult task to trace the report to anything reliable it would be as well, perhaps, to merely suggest to the Dutch dealers to add a little to their offerings, and doubtless their demands would be filled.

PRODUCTION TABLE.

SHOWING THE TOTAL DAILY YIELD OF THE PENNSYLVANIA OIL FIELD FROM SEPTEMBER, 1859, TO APRIL 30TH, 1882, IN BARRELS OF 42 GALLONS EACH.

Years.	Jan.	Feb.	Mar.	April.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.	Totals.
1859	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	10	15	18	28	2,173
1860	30	50	89	215	500	1,000	2,000	2,500	3,000	3,500	2,000	3,000	547,439
1861	3,201	4,041	4,800	5,400	6,000	6,100	7,100	8,500	7,000	5,150	5,514	6,716	2,119,045
1862	6,000	5,300	7,400	8,000	9,400	9,000	8,500	11,000	13,000	10,565	8,053	7,238	3,153,183
1863	6,200	6,400	7,000	5,500	6,000	7,603	7,022	8,100	9,200	7,120	9,500	10,260	2,667,543
1864	8,100	6,300	4,500	5,000	7,000	5,100	5,600	5,700	7,180	5,545	10,100	10,320	2,215,150
1865	5,900	5,800	5,000	7,500	8,000	8,000	7,400	6,350	6,400	6,800	7,600	9,350	2,560,200
1866	9,200	9,100	5,000	7,100	8,100	9,500	9,350	9,440	12,000	10,400	11,000	11,165	3,385,105
1867	10,900	8,100	9,000	10,100	10,500	9,000	10,100	10,000	10,100	7,660	9,155	8,313	3,458,113
1868	8,200	9,400	8,100	9,300	11,000	12,400	13,000	11,800	10,250	8,225	7,580	7,150	3,540,670
1869	8,100	8,500	10,000	11,000	13,000	13,000	13,560	13,000	13,500	12,500	11,200	10,625	4,186,475
1870	11,348	11,802	11,509	12,400	15,990	13,400	13,800	15,950	18,203	18,000	17,061	15,990	5,308,046
1871	13,500	13,300	13,082	12,950	13,054	13,882	14,900	15,866	15,555	15,889	15,599	15,841	5,278,072
1872	17,943	17,894	15,680	16,221	17,402	12,140	16,933	17,440	16,598	18,450	25,942	20,630	6,505,774
1873	20,550	21,460	21,830	22,260	24,632	26,361	23,406	30,900	32,500	31,343	33,584	34,680	9,849,508
1874	32,800	30,940	29,760	28,104	29,442	31,222	33,987	32,000	29,461	29,944	29,231	28,101	11,102,114
1875	27,900	26,509	26,012	23,009	23,000	23,805	24,991	23,940	23,800	23,900	23,821	23,594	8,948,749
1876	23,102	25,440	23,560	23,800	24,628	24,400	24,890	25,300	25,900	26,400	26,500	25,900	9,142,940
1877	26,930	27,560	28,860	32,060	36,000	37,440	39,210	42,100	41,321	41,200	39,900	40,120	13,230,330
1878	39,200	39,900	39,200	40,100	41,111	40,820	41,200	42,900	43,999	44,480	45,200	43,900	15,272,491
1879	44,000	43,830	47,960	50,810	52,911	55,600	56,911	59,940	61,498	60,980	58,750	58,231	19,835,903
1880	59,982	63,890	66,215	68,063	72,080	73,104	73,794	74,980	71,941	77,491	76,112	74,080	26,086,692
1881	73,030	69,060	73,900	75,245	79,000	82,460	81,900	79,100	78,231	77,971	77,892	76,642	28,136,353
1882	75,028	74,910	74,751	76,690	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . . . .
Total twenty-three years to December 31st, 1881,													186,532,067

WELLS COMPLETED.

TOTAL NUMBER WELLS COMPLETED EACH MONTH IN THE YEARS NAMED.

A. D.	Jan.	Feb.	March.	April.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.	Total.
1870	131	131	114	135	164	182	161	156	135	144	112	79	1,644
1871	98	68	70	81	95	150	139	116	125	186	161	181	1,472
1872	48	118	98	122	130	98	131	117	96	101	41	101	1,201
1873	100	105	105	110	106	180	112	116	116	111	108	95	1,361
1874	108	111	108	110	112	113	124	102	108	117	112	116	1,341
1875	184	186	194	180	169	194	208	206	208	215	213	228	2,385
1876	235	236	248	207	200	258	243	274	223	270	278	271	2,945
1877	275	249	296	264	336	598	314	254	332	460	398	391	2,962
1878	279	238	202	411	468	278	210	180	176	232	241	160	3,075
1879	144	136	221	263	395	336	335	280	269	229	225	268	3,101
1880	311	238	358	494	435	315	339	359	359	360	334	309	4,211
1881	232	218	201	310	412	371	348	335	314	302	347	405	3,795
1882	357	359	389	449	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . . . .

CANALS ON THE PLANET MARS.

A CURIOUS discovery, made by Signor Schiaparelli, Director of the Royal Observatory at Milan, seems to start again that old and unanswerable question, "Are the planets inhabited?" This Italian astronomer is one of the most assiduous watchers of the planet Mars. It was he who, in 1877–'8, first detected the many dusky bands which traverse and subdivide the ruddy portions of the martial orb. Again, in 1879–'80, when the position of the planet was favorable, he re-identified these strange lines; but during last January and February he has been able to observe and map out in more than twenty instances duplications of the dark streaks "covering the equatorial region of Mars with a mysterious network, to which there is nothing remotely analogous on the earth." The Italian astronomer has styled them "canals," for they bear the appearance of long seaways, dug through the martial continents, as if a mania for short cuts had seized the inhabitants of the planet, and everybody residing there had become an active M. de Lesseps.—*London Telegraph.*

WHEN the president of a bank directs checks to be paid beyond the amount upon deposit, his act is a fraud in law, and he is liable to the bank for any loss it may suffer thereby, in the opinion of the Supreme Court of California, in Oakland Bank for Savings vs. Wilcox, decided in March.

CRUDE OIL MARKET.

MONTHLY AND YEARLY AVERAGE PRICE OF PIPE LINE CERTIFICATES OR CRUDE OIL AT THE WELLS, IN BARRELS OF 42 GALLONS EACH.

A. D.	Jan. Ave'age	Feb. Ave'age	March Ave'age	April Ave'age	May Ave'age	June Ave'age	July Ave'age	Aug. Ave'age	Sept. Ave'age	Oct. Ave'age	Nov. Ave'age	D'emb'r Ave'age	Yearly Avrges.
1859.	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	20.00	20.00	20.00	20.00	20.
1860.	19.25	18.00	12.62½	11.00	10.00	9.50	8.62½	7.50	6.62½	5.50	3.75	2.75	9.
1861.	1.00	1.00	1.00	.62½	.50	.50	.50	.25	.20	.10	.10	.10	.
1862.	.10	.15	.22½	.50	.85	1.00	1.25	1.25	1.25	1.75	2.00	2.25	1.
1863.	2.25	2.50	2.62½	2.87½	2.87½	3.00	3.25	3.37½	3.50	3.75	3.85	3.95	3.
1864.	4.00	4.37½	5.50	6.56	6.87½	9.50	12.12½	10.12½	8.87½	7.75	10.00	11.00	9.15½
1865.	8.25	7.50	6.00	6.00	7.37½	5.62½	5.12½	4.62½	6.75	8.12½	7.25	6.50	6.87
1866.	4.50	4.40	3.75	3.95	4.50	3.87½	3.00	3.75	4.50	3.39	3.10	2.12½	3.59
1867.	1.87½	1.85	1.75	2.07½	2.35	1.90	2.62½	3.15	3.40	3.55	2.50	1.87½	2.74
1868.	1.95	2.00	2.55	2.82	3.75	4.50	5.12½	4.57½	4.00	4.12½	3.75	4.35	3.41½
1869.	5.75	6.95	6.00	5.70½	5.35	4.95	5.37½	5.57½	5.50	5.50	5.80	5.12½	5.63¾
1870.	4.52½	4.52½	4.45	4.22½	4.40	4.17½	3.77½	3.15	3.25	3.27½	3.22½	3.40	3.89
1871.	3.82½	4.38	4.25	4.01	4.60	3.85½	4.79	4.66	4.65	4.82½	4.25	4.00	4.34
1872.	4.92½	3.80	3.72½	3.52½	3.80	3.85	3.80	3.58½	3.25	3.15	3.83½	3.32½	3.64
1873.	2.60	2.20	2.12½	2.30	2.47½	2.22½	2.00	1.42½	1.15	1.20	1.25	1.00	1.83
1874.	1.20	1.40	1.60	1.90	1.62½	1.32½	1.02½	.95	.95	.85	.55	.61½	1.17
1875.	1.03	1.52½	1.75	1.36½	1.40	1.26½	1.09	1.13	1.33	1.32½	1.44	1.55	1.35
1876.	1.80	2.00	2.01	2.02¼	1.90½	2.01¾	2.24½	2.71	3.81	3.37½	3.11	3.73	2.56¼
1877.	3.53¼	2.70	2.67½	2.58	2.24	1.94⅝	2.07½	2.51	2.38	2.56¾	1.91	1.80	2.42
1878.	1.43	1.65¼	1.59	1.37½	1.35¼	1.14	.98¾	1.01⅜	.86½	.82½	.89⅜	1.16	1.19
1879.	1.03	.98	.86¼	.78½	.76	.68⅜	.69⅞	.67⅛	.69½	.88½	1.05⅝	1.18⅛	.85⅞
1880.	1.10¼	1.03⅛	.88¼	.78	.80	1.00	1.06¼	.91	.96	.96⅞	.91⅞	.91⅝	.94½
1881.	.95½	.90⅜	.83⅜	.86¾	.81⅞	.81¼	.76⅞	.78⅝	93.3–16	.94¾	.83	.84	.85¾
1882.	.83¼	.85¾	.80⅞	.78½	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .

THE REAL ESTATE MARKET.

TRANSACTIONS in real estate and general oil property were very numerous during the latter half of April. The Allegany field, as usual, took the lead in this particular, as well as in the matter of new wells, the sales for the month footing up about $500,000. During the early part of the month the prices paid in that field were higher than ever before. Leases, in good territory, were not to be had at any price except in rare cases, and in territory considered only medium as high as $250 an acre and ¼ royalty was paid. Production sold according to the value of the property for drilling purposes, those purchasing seeming to have a desire for this class. During the latter part of the month there was a slight drop in prices, owing to the striking of the mystery, "646," in the Warren field. But the scare did not last long, and property in that field still booms as if dollar oil was within a month's grasp of the trade.

In the Bradford district there is but little change in values for producing properties. The sales for the month foot up fully $250,000.

In the Warren district the excitement ran tolerably high during the early days of the month. In the April number of the AGE it was stated that $100,000 had been deposited in that section within a few days after the striking of the mystery. Since that time at least $400,000 more have been anchored throughout the field south and west of Clarendon. In the immediate vicinity of the mystery, $350 and ⅛ royalty were paid. One mile from the well, land was sold at $125 an acre in fee, and in some cases, from half to three-quarters of a mile northeast and southwest from the well it was sold at $100 and ⅛ royalty per acre bonus. These same lands are now held at ⅛ royalty and $200 an acre bonus. Old wells in the Warren field are offered below cost of drilling, and wells not two months old can be purchased at first cost. In this field operators have not adopted the system of selling at any stipulated price per barrel. On the whole, business was fairly healthy during the month, and, notwithstanding the low price of oil, money seemed to be no object when a good thing was offered. The majority of producers, however, feel keenly the recent drop in prices and are by no means very anxious to purchase property where cash is demanded, as in the Warren field.

THE Standard Oil Company is engaged constructing a pipe line to the sea-board, to compete with the Tide Water Pipe, which has a line connecting the McKean District with the Reading Railroad at Williamsport. It is with considerable difficulty the Standard succeeds in obtaining the right of way through Chester County, as the farmers along the route are apparently hostile to the enterprise.

PETROLEUM IN PERSIA.

MR. CHURCHILL, British Consul, states that for hundreds of years naphtha has been extracted by the natives from pits in Persia, and the quantity underground appears to be unlimited. Two or three years ago a well, 81 feet deep, was shown to him that was dug by the Persians, when they were masters of the country, 200 years ago. In summer, when gasses are generated in the bowels of the earth, the naphtha is thrown up in jets, some reaching 100 feet in height above the soil; it then runs to waste, as no means have as yet been devised to collect such large quantities of this oil. While at Baku, Mr. Churchill visited the wells situated on the plateau of Balakhana. Strings of high-wheeled carts were met going to and coming from the wells, conveying in raw skins, naphtha to the town. "The first well we visited," he says, "was an artesian well, 126 feet deep. It was bored three years ago, and last year produced from 16,000 to 20,000 poods (a pood is 36 lbs. in weight) of naphtha a day. A horse was employed in raising the oil by means of a pump. Each time this pump was set to work a jet of naphtha, seven or eight feet high and one in diameter, came gushing out, and kept on coming for some time. We next visited the well that was sunk by the Persians 200 years ago. With a looking-glass to throw a sunbeam down it, the naphtha is seen working away at the bottom, some eighty feet below the surface, like a troubled sea."

The two largest manufactories are those of Mr. Mirzayoff and Messrs. Kokoroff & Co., at Surakh Khana, a spot situated five miles from Balakhana. This spot was chosen on account of the economy of fuel, as gas issuing out of the surface is used in lieu of coal or naphtha. There is at Surakh Khana the wonderful sight of green fields with waving corn, in the midst of which the removal of a foot or two of earth will reveal a jet of gas that will raise an enormous blaze if set on fire. It is here that the Hindoo monastery of fire worshippers is established, where a tongue of flame is perpetually kept up. But if these establishments have the advantage of cheap fuel, the position of Suraks Khana, away from the naphtha wells, and at a distance from the town, increases the cost of transport, and, consequently, adds to the cost of the article produced. The buildings, moreover, are too palatial for practical purposes. There may be said to be four distinct operations in the development of this trade. 1st, the extraction of the naphtha from the earth; 2d, its conveyance to the refining house; 3d, its refining processes; 4th, its transport and its disposal in the markets of Russia.

The means employed in procuring the naphtha are, in some cases, most clumsy and primitive, and it is only within the last three or four years that the process of boring has been resorted to, and wells are even now dug in the ordinary fashion at great expense. Then, again, while fuel lasts in abundance on the spot, few steam engines are used, and those which are employed are not of the best. After that the carting of the naphtha is both clumsy and expensive. The carts will not carry more than 25 or 30 poods each, and every horse and cart requires a separate conductor. There is a vast field for economy in this, if in nothing else, and various plans have been suggested for the transport of the raw material to the manufactories. Some are for the formation of a tramway, others of a railway with suitable tanks to hold the oil, while a third party insists upon the laying down of an iron pipe through which the naphtha would, by gravitation, find its own way to the lower level of the town.

THE ALLEGANY FIELD.

TABLE SHOWING THE PROGRESS OF DEVELOPMENTS AND PRODUCTION OF THE ALLEGANY (N. Y.) FIELD.

Month.	No. of wells completed.	Dry.	Production. Bbls.	Average per well.	Daily Production of Field. Bbls.	Drilling.	Rigs.	Stocks in wooden tanks. Bbls.	Stocks in Iron tanks. Bbls.
Total, 1880	8	42	76	9½	76	4	6	. . .	. . .
Jan'y, '81,	4	2	18	9	94	4	5	. . .	. . .
February	4	1	24	6	112	4	8	. . .	. . .
March .	5	2	60	12	162	4	7	. . .	. . .
April . .	3	1	20	10	170	5	6	. . .	. . .
May . .	4	1	48	12	212	20	21	. . .	. . .
June . .	14	8	130	9¼	327	24	35	. . .	. . .
July . .	22	5	275	12½	588	47	57	. . .	. . .
August .	53	17	586	11	1080	62	68	. . .	. .
September	63	11	910	14½	1740	105	118	. . .	. . .
October .	96	5	1432	15	2896	164	198	38000	108891
November	154	10	2732	17½	5180	155	200	84666	142216
December	196	2	5115	26 1/10	8937	187	204	180200	169250
Jan. 31, '82,	162	2	3914	24 1/6	11123	191	209	270860	243147
Feb. 28th	189	4	4154	21.97	13200	212	201	373460	258247
March 31st	216	2	5580	25.83	16000	215	221	374490	359347
April 30th	257	6	6356	24¾	20760	226	230	400000	417347

A DISPATCH from Harrisburg, April 28th, states that counsel for the Commonwealth that day filed exceptions to all the main points in the decision of the Dauphin County Court holding the Standard Oil Company liable for the payment of only about $30,000 of the $796,000 claimed by the State to be due from it on its capital stock. The case will be argued before the Supreme Court the latter part of this month.

SHIPMENTS.

Shipment of Crude and Refined, in Barrels of 42 Gallons each, reduced to Crude Equivalent out of the Producing Regions in the years named:

YEAR.	January.	February.	March.	April.	May.	June.	July.	August.	September.	October.	November.	December.	Totals.
1859											500	1,200	1,700
1860	900	1,200	2,500	4,640	11,000	21,000	58,500	64,300	79,000	78,400	63,400	38,400	423,240
1861	54,800	49,620	68,410	95,300	184,000	189,000	200,400	210,000	263,000	184,000	76,321	75,282	1,650,133
1862	98,212	93,101	103,762	201,430	256,320	385,211	375,440	376,311	401,210	406,500	213,611	190,463	3,141,521
1863	171,132	104,928	148,388	288,994	456,211	428,282	213,413	281,400	398,211	264,441	281,340	206,211	3,242,951
1864	148,324	101,431	96,486	132,486	125,218	221,386	110,490	101,218	228,430	220,386	201,441	154,765	1,842,001
1865	121,386	94,803	103,201	122,222	140,301	338,403	184,231	115,821	231,402	228,321	215,262	204,779	2,100,132
1866	132,200	121,320	180,206	260,231	280,320	390,260	200,410	290,210	390,431	318,616	210,016	236,701	3,010,921
1867	123,460	115,321	165,230	250,830	300,210	360,311	210,410	260,310	384,206	300,102	280,013	132,807	2,883,210
1868	150,220	144,201	200,410	280,430	310,408	400,046	390,402	320,210	480,306	260,240	280,260	265,377	3,482,510
1869	200,026	160,320	240,210	260,406	340,318	400,601	310,260	250,214	450,200	480,860	280,210	249,896	3,623,521
1870	360,933	312,910	354,400	390,003	407,908	418,516	410,707	516,679	542,217	557,624	519,780	444,254	5,235,931
1871	437,691	347,718	383,890	389,147	587,375	501,754	541,137	528,134	551,075	505,071	480,977	410,822	5,664,791
1872	476,966	407,606	276,220	428,512	510,417	529,228	591,238	621,954	541,607	607,468	477,940	430,786	5,899,942
1873	573,124	527,440	668,374	708,191	768,176	696,414	814,449	864,768	952,955	1,010,852	959,589	955,443	9,499,775
1874	843,663	501,220	518,246	803,409	899,027	815,413	940,281	793,865	1,014,570	543,341	546,117	602,348	8,821,500
1875	435,095	327,776	693,918	729,581	681,679	745,986	904,537	882,089	1,109,392	871,917	671,066	871,902	8,924,938
1876	677,289	519,193	623,762	603,037	646,150	921,862	1,228,530	1,203,402	1,154,549	524,190	871,496	1,190,983	10,164,443
1877	743,461	484,904	913,919	903,526	1,234,324	1,391,124	1,096,951	1,425,943	1,563,797	1,268,971	1,205,634	600,019	12,832,578
1878	775,791	774,234	741,512	846,636	960,894	1,135,119	1,330,454	1,655,651	1,434,225	1,747,390	1,281,410	992,688	13,476,000
1879	663,998	702,729	973,879	1,136,188	1,331,469	1,369,314	1,625,035	1,808,238	1,627,120	1,662,269	1,453,645	1,542,585	15,896,469
1880	1,650,409	1,395,151	1,613,371	842,268	1,095,259	975,083	1,231,611	1,304,129	1,252,635	1,665,933	1,226,030	1,335,613	15,587,447
1881	1,061,617	915,028	1,276,740	1,348,398	1,563,436	1,729,697	1,925,532	2,214,877	2,031,950	2,080,467	2,069,641	2,014,655	20,232,038
1882	1,817,973	1,829,779	1,729,237	1,751,294									

PRODUCTION BY FIELDS FOR THE MONTH OF APRIL.

	Barrels.	Decline April.	Increase April.
Bradford	48,865	2,867	
Warren	2,260		260
Lower Country	6,205	173	
Allegany	19,360		4,560
Totals	76,690	3,040	4,820
Increase over March			1,780

THE above table gives a result quite unexpected for April. It shows an increase in the daily yield of 1,780 barrels, instead of a small decrease as the trade anticipated. This, however, is a result of the excessive drilling in the Allegany field; and while we may be flooded with oil at the date of this issue of the AGE and the next if the operators there choose, yet we look upon it as simply a shower, that came faster and heavier than the people were prepared for, but on account thereof was of short duration. Allegany has about *so much* oil, and the more rapidly it is brought to the surface, the greater will be the want for drillable territory when it is finished. As there were 226 wells drilling in that field on the 1st of May, it may be safely stated that there will be that many completed during the month, and, if the April policy is pursued, the number will be still higher. May will be the turning point, however, in the number of completed wells for each month, as it will enter upon the last and smallest half that the district will have room for. The dial, which indicates a rapid approach of the two important elements of the trade —production and consumption—has been *set back* a month, to return when perhaps it will be of greater advantage to all concerned. Meanwhile, it is to be presumed, Warren and Richburg operators will loose no time in attempts to frustrate all hopes of declining yield.

PETROLEUM AS A FUEL.

THE question of fuel has long been a subject of study for scientists, engineers and inventors, and yet it is not entirely solved. The principal point generally considered has been how to burn coal and wood to the best advantage—that is, in the most economical manner. Setting aside this question, the Chemical Fire Co., No. 8 Friend Street, Boston, Mass., is demonstrating the availability and the superiority of *crude petroleum* as a fuel supply. The method may be briefly stated as follows: From an elevated tank of petroleum leads an iron tube, which enters an ordinary stove just above the grate, here it passes through a coil of tube, which, being previously heated, converts the petroleum into gas. The gas escaping against a heated block of metal, called the deflector, is ignited and directly furnishes the heat for cooking or warming the room, or in the furnaces of boilers for generating steam. In this way it can be substituted for the ordinary fuel used for locomotives, and at an immense saving of room and weight. An experiment has been made on the Point Shirley Narrow-Gauge Railroad, at which time sufficient steam was generated by six small coils to draw several cars. For use in ranges and stoves in the kitchen this new system seems to embody many advantages that are at once obvious. Moreover, the gas generated in the coils is of superior quality for illuminating purposes, it being necessary simply to conduct it to a gasometer, from which it can be used as desired, and at an expense not exceeding 65 cents per 1,000 feet. A company, with a large paid-in capital, has been formed for the introduction of this new mode of heating and lighting.

This argues favorable things in the direction so "radically" pointed out by the AGE. It is not argued, nor has it been suggested that petroleum, in either the crude or refined state, should be used as the fuel, but rather that it be converted first into gas, which, as shown by Capt. Butler, as well as all experimentors, can be accomplished at an immense saving over all other commodities. Gas manufacturers are beginning to see this, and the Standard Oil Co., which is, perhaps, the most far-seeing concern engaged in the oil business, is giving some attention to this important subject. No other company could compete with this in supplying gas to consumers if it should undertake the work, which it is hoped it will. We have no animosity towards the coal trade, but we have a strong desire that our own commodity stands where it belongs—first, in furnishing light and heat.

CONGLOMERATE.

WARREN COUNTY will be thoroughly tested for grease during the summer, in almost every corner of its rough exterior.

THE late strikes in the Sugar Run section are adding interest to the territory in that region. They are much better wells than the trade has been led to believe were among the possibilities of the latitude.

THE largest set of drilling tools ever forged in the Oil Country has just left the shop of Brown & Norris, Bradford, for use in boring for gold in California. The bits are 15 inches across the face and the entire "string" is made in accordance. The hole is drilled four feet in diameter.

A WELL has been drilled to a depth of nearly 2,000 feet in Bear Hollow, Great Valley, Cattaraugus Co., N. Y. Strange to say, at about 1,900 feet, evidences of oil were discovered. This would lead to the conclusion that oil may be found at almost any depth all the way to centre of gravity.

DUKE & HARRIS are just completing a mystery on lot 13, between Sugar Run and Kinzua, though a little west of the regular line. Mr. Harris states that he does not intend to hold the well as a bear upon the market, but he does not wish to see more territory opened at this juncture. He has been watching the well closely for two weeks, as the drill progresses. He intends to be the first on the ground if anything of value is developed. If not, it is presumed he will show it up for the benefits it may bring.

EAST of the Allegheny River, some distance above Trunkeyville, on Dunn's Run, the Economite Oil Company obtained a ten-barrel well in 1870, which is still yielding a small quantity of oil. East of this well the company sank about a score of wells, trying to lengthen what it supposed was an extension of the Fugundas belt eastward, but all were total failures. The oil obtained in the well now yielding was of a dark color, similar to that found at Fugundas, when first discovered, but afterwards changed to a bright green.

THE question of a belt extending from Kinzua to Clarendon is frequently discussed by oil men, but difficulties, in the shape of a few very dry holes in the intervening section, operate violently against the theory. Southwest of the Kinzua development, about three miles, on lot forty-eight of the Warren County map, D. Beatty got a duster of the first magnitude last year. Then on lot

seventy-two, south and east of forty-eight, about a mile and a half, there is another pillar of this character. As the Clarendon field is approached, similar landmarks dot the oil horizon.

THE *Patrolia, Ont., Topic* says: Among the important consumers of Canadian petroleum figure, conspicuously, the Consumers Gas Company, of Toronto. Last year their consumption of gas oil amounted to 15,000 bbls., and they have already contracted with a firm in this town to supply them with 18,500 bbls. for the present year. This oil is a sort of intermediate between paraffine and distillate, and makes a very superior quality of gas. Several gas companies in Canada are now using it, and it is growing in popularity every year. Let it boom.

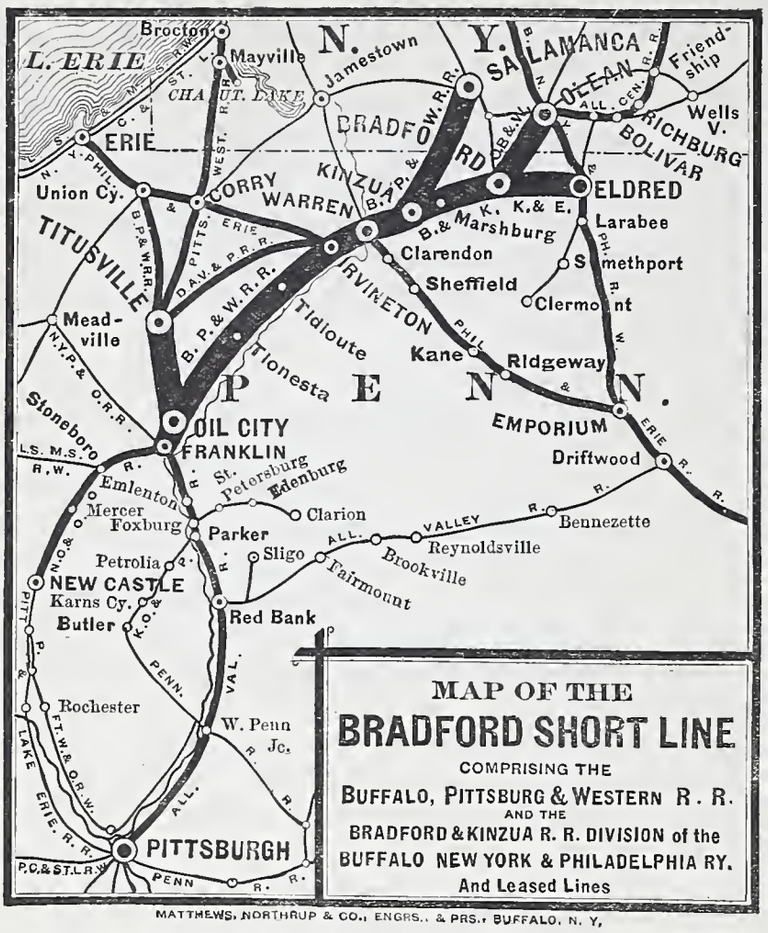
MR. Geo. H. Van Vleck, of Buffalo, recently drilled three wells in the Litchfield, Ill., oil field with unsatisfactory results. They were sunk in search of lubricating oil, which is known to abound to some extent in that vicinity, but in all these cases nothing of an encouraging nature was found. There is one producing well in the region of limited capacity, but the oil is of a very superior quality. The natives are not willing to accept Mr. Van Vleck's tests as sufficient to condemn the territory and are preparing to sink other wells. Litchfield is a trifle off the belt. Try at Corry, Pa.

HITCHCOCK'S Patent Lamp, manufactured by the Hitchcock Lamp Company, of Watertown, N. Y., is a great improvement in a department in which universal interest is centered. This lamp will, owing to its mechanism, prevent those serious accidents which arise from the use of kerosene, and will afford a steady and economical light, surpassing anything to be obtained for burning kerosene in the ordinary way. It gives seventeen candle power, will run for nine hours with a single filling, and requires little or no trimming. It has been adapted to burning lard when this is desired. It is a most popular lamp, and has attained an extensive introduction in the Southern States.

THE following is from the St. Augustine *Weekly*, and speaks volumes for the people of the oldest county in North America: "At the late term of the Circuit Court of St. John's County, the grand jury came in court the third day of the session and asked to be discharged, as there was no business before them. The judge, before discharging the grand jury, took occasion to compliment them and the public generally, that during the six months just past there had been no offences in this county against the law, requiring their attention, a state of affairs, said Judge Baker, almost unparalleled in the United States. The judge said that nothing similar had occurred within his experience, and intimated that such a condition of things came as near perfection, and paradise, as mortals could hope to obtain.

A WOMAN of advanced age, and a maid of eccentric characteristics, named Titus, received an inheritance, some 13 years ago, consisting of 185 acres of land near 646, in Warren County. When the excitement broke out there she sold the property, realizing about thirty thousand in cash. She had been engaged in traveling by rail and on foot throughout Warren and adjoining counties disposing of ladies' furnishing goods—principally underware. In this way she managed to keep the taxes on the property paid. These amounted to about $8.00 a year. She was thought, at times, to be a little off, so to speak, in her intellectual discernments. At frequent times she had parties arrested whom she mistrusted of a disposition to poison her. What effect the sudden fortune will have upon her is a matter in which many who know her are somewhat interested.

THE towns of Richburg and Bolivar, in the Allegany Oil Field, are competitors for highest rank in the category of oil towns. For a season immediately following the strike of the old Richburg Well, Richburg seemed to have things all its own way. It grew with considerable rapidity, while Bolivar slumbered almost in silence, receiving the benefit only of the Richburg overflow. When people could not find accommodations at Richburg they were compelled to proceed to the other place, and it is but just to remark that those comprising the overflow were always so nicely treated at Bolivar that they invariably returned without invitation or force. The town had a peculiar attraction about it as it nestled comfortably in a beautiful valley of the Little Genese Creek, with nicely rounded hills on three sides. There were no oil wells in close proximity to discourage residents by the danger of fire, and it began to be whispered that Bolivar was a nice place in which to locate. In less than six months from the breaking out of the Richburg excitement, therefore, the tide was set in that direction and Richburg, the great, has encountered a champion of equal merit with itself.



MATTHEWS, NORTHRUP & CO., ENGRS. & PRS., BUFFALO, N. Y.

The above map shows the great railroad system which invests the Northern oil fields with connections to all points East, West, North and South. Until recently, the road from Oil City Northeastward terminated at Irvineton, but this has been extended to Warren, thence to Kinzua and Bradford. To Kinzua and Salamanca the road is standard gauge. At the former place a connection is made with the narrow gauge from Olean, Eldred and Bradford, making the line, as indicated by the headlines of the map, the "Bradford Short Line" to the lower country. The celebration of the completion of this important enterprise is to take place on Tuesday, the 17th inst., by an excursion over the route. The new road is one of the most substantial ever constructed in this country, having a solid bed its entire length, except two bridges which span the Allegheny River: one at Warren, and the other at, or near, Kinzua, and these are built to stay. It is not easy to calculate the value of this important achievement to the Oil Country and its great metropolis—Bradford. For many years it has appeared as a dream to the oil fraternity that a line of railway would, at some time, traverse the apparently wasteless tracks and forests lying between Bradford and the lower oil districts; but the dream has proven a successful reality.

A person desiring to visit any point in the Oil Regions from Wellsville, Southwestward, has now only to board a first-class railroad train, and proceed to his destination in the shortest possible time; whereas, but a few years ago it would require a lengthy roundabout trip by rail, or a distressing jaunt over next to impassible highways, to accomplish the same result. The Olean, Bradford & Warren Branch of this system passes through the very heart of the richest portions of the great northern basin, and in its course to the Southwest traverses an immense region of country heavily timbered. Aside from this, it has the advantages guaranteed by future oil developments between Bradford and Warren that seem inevitable. The upper oil public has waited with much patience and expectancy the completion of this new line, which will so largely improve the opportunities of visiting the new developments in the Warren and Forest fields, which are just now commanding the attention of the entire oil trade.

From Bradford to Oil City thirty miles of travel and two hours' time are saved by this line, as will be seen by the table of trains hereto appended. The advantage of the standard gauge, from Warren North, will be felt by the traveling public from Salamanca South, as it obviates the necessity of change of cars between that point and Oil City, and between Bradford and Oil City there will be but one change. It should have an additional title, something like "The Great Belt Railway."

Following is the schedule of trains:

Leave	Bradford at	7:00 A. M., 10:00 A. M., 4:30 P. M.
Arrive	at Warren	10:08 A. M., 12:06 P. M., 6:40 P. M.
"	Oil City	2:20 A. M., 8:55 P. M.
Leave	"	6:40 A. M., 3:20 P. M.
"	Warren	8:45 A. M., 5:30 P. M.
Arrive	Bradford	10:50 A. M., 7:50 P. M.

All trains connect at Bradford for Olean, Richburg and Bolivar, and at Warren for Clarendon and Stoneham.

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BUFFALO & SOUTH-WESTERN DIVISION.

LOCAL TIME TABLE.

	(10)	Daily (4)	Daily (2)	STATIONS.	Mls	Daily (1)	Daily (3)	(11)
	P. M.	P. M.	A. M.			A. M.	P. M.	A. M.
	.....	6.50	10.20	Ar...BUFFALO..Lv.	0	8.10	4.45	.....
.....	4.17	.....	9.58	Lv.Limest'ne R'ge "	4	.....	5.06	8.43
.....	3.57	.....	9.47	" ... Big Tree... "	8	.....	5.16	8.48
.....	3.50	.....	9.44	" Abbott's Road "	10	.....	5.20	8.55
.....	3.33	6.14	9.35	" ..Hamburgh.. "	12	8.48	5.28	9.35
.....	3.30	.....	9.33	" .Water Valley. "	13	.....	5.30	9.40
.....	3.15	.....	9.26	" . Eden Valley. "	16	.....	5.36	9.53
.....	3.03	6.02	9.20	" . Eden Center . "	18	9.00	5.43	10.05
.....	2.40	5.53	9.09	" .North Collins. "	22	9.09	5.53	10.30
.....	2.18	.....	8.57	" ....Lawtons... "	26	.....	6.04	10.53
.....	2.00	5.37	8.49	" .... Collins. .. "	29	9.24	6.12	11.10
.... .	1.45	5.30	8.40	" ...Gowanda .. "	32	9.30	6.20	12.00
.....	12.45	5.15	8.25	Lv.....Dayton... Ar.	37	9.45	6.35	12.30
.....	12.30	5.10	8.23	Ar.....Dayton ...Lv.	37	9.55	7.03	1.00
.....	12.15	5.02	8.19	Lv....Markhams.. "	39	10.00	7.08	1.12
.....	11.45	4.53	8.11	" ..Pine Valley.. "	42	10.08	7.17	1.32
.....	11.05	4.40	8.00	" .Cherry Creek. "	47	10.20	7.29	2.02
.....	10.30	4.29	7.51	" ..Conewango.. "	51	10.30	7.39	2.20
.....	9.38	4.08	7.34	" ....Kennedy... "	59	10.48	7.58	3.16
.....	9.00	3.53	7.22	" D.A.V.&P.Cr'g "	65	11.02	8.13	3.53
. ..	8.30	3.45	7.15	Lv.JAMESTO'N..Ar.	68	11.10	8.20	4.15
.....	A. M.	P. M.	A. M.			A. M.	P. M.	P. M.

Trains No. 1 and 4 stop at all stations on Sunday.

THROUGH CONNECTIONS FOR THE WEST.

(4)	(2)	STATIONS.	(1)	(3)
.....	2.50 P. M.	Ar.....BOSTON Lv	.....	3.00 P. M.
11.25 A. M.	7.25 A. M.	" .....New-York .... "	5.45 P. M.	6.45 "
3.47 "	11.00 P.M.	" .... Binghamton..... "	1.21 A. M.	3.35 A. M.
2.03 "	8.55 "	" .....Elmira ..... "	3.07 "	5.35 "
9.25 P. M.	1.03 "	" .... Niagara Falls .... "	4.35 "	2.15 P. M.
6.50 P. M.	10.20 A. M.	Ar.. ..BUFFALO Lv	8.10 A. M.	4.45 P. M.
3.45 P. M.	7.15 A. M.	Lv... JAMESTOWN....Ar	11.10 A. M.	8.20 P. M.
1.03 "	5.20 "	" ..... Corry ..... "	12.55 P. M.	8.55 "
11.40 A. M.	3.55 "	" ..... Meadville ..... "	2.20 "	10.40 "
10.25 "	2.40 "	" .....Greenville..... "	3.36 "	3.44 A. M.
9.10 "	1.08 "	" ..... Warren ..... "	4.44 "	4.54 "
7.10 "	10.45 P. M.	" ..... Cleveland..... "	7.00 "	6.50 "
8.17 "	12.08 A. M.	" .....Ravenna..... "	5.42 "	5.47 "
8.05 "	11.55 P. M.	" .....Kent..... "	5 55 "	6.00 "
7.24 "	11.20 "	" .....Akron..... "	6.38 "	6.30 "
4.44 "	8.25 "	" ..... Mansfield ..... "	9.10 "	9.30 "
4.05 "	7.40 "	" .....Galion..... "	10.00 "	10.10 "
3.13 "	6.48 "	" .....Marion..... "	11.02 "	11.02 "
1.18 "	4.50 "	" .....Urbana..... "	1.18 "	1.00 P. M.
12.46 "	4.04 "	" .....Springfield..... "	2.15 "	1.50 "
11.50 P. M.	3.10 "	" .....Dayton..... "	3.30 "	2.50 "
9.20 "	12.40 "	" .....Cincinnati..... "	6.00 "	5.30 "
.....	8.30 A. M.	" ChicagoP.Ft.W.&C.Ry "	.....	8.20 "
7.50 A. M.	6.50 P. M.	" .....St. Louis..... "	7.10 P. M.	7.05 A. M.
6.25 P. M.	6.47 A. M.	" ....Kansas City..... "	8.45 A. M.	8.30 P. M.
5.10 P. M.	7.30 A. M.	Lv..... OMAHA .....Ar.	10.00 A. M.	7.35 P. M.

Train No. 1 arrives at Titusville 1.30 P. M., Oil City 3.40 P. M.

BRADFORD BRANCH.

12)	(22)	(6)	D'ly. (20)	STATIONS.	Mls	(15)	(23)	(9)	D'ly (21)
P.M.	P.M.	A.M.	A.M.	Ar.] [Lv.		A. M.	A. M.	P.M.	P.M.
3.20	4.01	8.30	6.55	" .CARROLLTON. "	0	9.20	11.04	4.10	8.22
2.59	3.44	8.06	6.39	" ....Limestone. .. "	6	9.43	11.20	4.35	8.42
2.52	.....	7.58	6.31	" ... .Babcock .... "	8	9.50	.....	4.41	8.50
2.45	3.34	7.50	6.26	" .....Kendall..... "	10	9.58	11.31	4.48	8.57
2.40	3.30	7.45	6.20	Lv...BRADFORD..Ar.	11	10.03	11.35	4.51	9.00
1.45	.....	7.35	.....	Ar...BRADFORD..Lv.	11	10.45	1.20	4.55	....
1.35	.....	7.25	.....	" ....DeGolia's....Ar.	14	11.05	1.30	5.03	....
1.30	.....	7.18	.....	" ...Custer City... "	15½	11.10	1.35	5.07	....
P.M.	.....	6.30	.....	Lv. .BUTTSVILLE. "	26½	12.25	2.05	5.45	....
.....	.....	.....	.....	.....	....	.....	.....	.....	....

EXTRA TRAIN leaves Buttsville at 8.40 A. M., Bradford 10.03 A. M., arriving at Carrollton 10.45 A. M., *Daily.*

EXTRA TRAIN leaves Buttsville at 1.10 P. M., Bradford 2.15 P. M., arriving at Carrollton at 4.55 P. M.

EXTRA TRAIN leaves Carrollton 11.50 A. M., arriving at Bradford 12.35 P. M. Custer City 1.20 P. M.

SUNDAY SPECIAL TRAINS leave Carrollton at 12.15 and 5.05 P. M., arriving at Bradford at 1.00 and 5.54 P. M.

Train No. 12 runs daily between Bradford and Carrollton.

TRAINS BETWEEN BUFFALO AND BRADFORD.

	(4)	Daily (2)	Mls	STATIONS.	Mls	Daily (1)	Daily (3)	
	P. M.	A. M.				A. M.	P. M.	
... ..	6.50	10.20	78	Ar... BUFFALO....Lv.	0	8.10	4.45	.....
.....	6.14	9.35	66	Lv.....Hamburgh .... "	12	8.48	5.28	.....
.....	5.37	8.49	49	" .....Collins..... "	29	9.24	6.12	.....
.....	5.30	8.40	46	" .....Gowanda ..... "	32	9.30	6.20	.....
.....	5.15	8.25	41	" ..... Dayton ..... "	37	9.45	6.35	.....
.....	5.09	8.08	41	Ar.....Dayton..... Lv.	37	9.55	7.03	.....
.....	4.35	7.30	25	Lv....Little Valley...Ar.	53	10.31	7.46	.....
.....	4.15	7.10	17	" .....Salamanca ... "	61	10.55	8.07	.....
. ..	4.03	6.57	11	" .....Carrollton..... "	67	11.04	8.22	.....
.....	3.44	6.39	5	" .....Limestone..... "	73	11.20	8.42	.....
.....	.....	6.31	3	" .....Babcock..... "	75	.....	8.50	.....
.....	3.34	6.26	1	" ..... Kendall..... "	77	11.31	8.57	.....
.....	3.30	6.20	0	Lv....BRADFORD...Ar.	78	11.35	9.00	.....
	P. M.	A. M.				A. M.	P. M.	

Train No. 1 arrives at Bradford *on Sunday* at 1.00 P. M.

REMEMBER, THAT BETWEEN BUFFALO AND BRADFORD THERE IS NO CHANGE OF CARS!

MARTIN'S RED JACKET

Double Acting Frost-Proof Force Pump.

Always ready and reliable in case of fire, quick and easy to operate for washing buggies, etc. It is the only double acting frost-proof force pump that can be repaired without removing pump from platform. It is cheap, durable, efficient and suitable for wells of any depth. No householder should be without a pump of this kind.

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Sanitary Plumbers, Gas and Steam Fitters, and dealers in Gas Fixtures, 17 Seventh Ave. (one door above Smithfield Street), PITTSBURGH, PA.

THEO. M. SHEARER & CO.,

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BOILERS AND ENGINES,

Tubing, Casing, Rods, Etc.

SHOP FOOT OF CORYDON STREET,

BRADFORD, PA.

I. E. DEAN,

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PRODUCTION and GENERAL

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Buys and Sells Oil Lands and Leases and Operates the Same,

For parties desiring, at lowest possible expense.

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ENGINE REPAIRING A SPECIALTY.

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General Oil Property

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THE

BUSY 646 STORE

E. C. BAILEY & CO.

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THIS GREAT MERCANTILE ESTABLISHMENT is now prepared to exhibit the largest stock of DRY GOODS, BOOTS AND SHOES and GENT'S FURNISHING GOODS ever offered for sale in the Allegany Oil Field. Having just returned from the East, where large job lots were secured, for cash, at bargains such as have never been equaled in this part of the country, the firm are prepared to sell goods on a basis of fifty cent oil. In connection with the departments already noticed, we have a large and well selected stock of MILLINERY and LADIES' FANCY GOODS.

The public is advised to call and examine this great stock before purchasing elsewhere. No trouble to exhibit goods.

E. C. BAILEY & CO.

Gold Medal Award! Pittsburgh Exposition, 1875.

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ELAINE,

THE FAMILY

SAFEGUARD OIL.

Cannot be exploded. Can be burned in any petroleum lamp. It is the very highest grade of Petroleum Oil from which in the process of manufacture every impurity has been eliminated. Elaine is free from Benzine and Paraffine. In Color, Elaine is Spring Water White, and its "Fire Test" is so high as to make it as absolutely safe as any illuminant known. Having no disagreeable odor, Elaine is a pleasant Oil for family use. It does not incrust the wick, and thus is avoided its frequent retrimming.

WARDEN & OXNARD, - PITTSBURGH, PA.

☞ First Premium Awarded over all competitors at Centennial Exposition, Philadelphia, 1876.

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MANUFACTURERS OF AND AGENTS FOR

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OF EVERY KIND USED IN DRILLING FOR OIL, GAS OR WATER, SUCH AS

Engines, Boilers, Rig Irons and Outfits, Drilling Tools and Ropes,

TUBING, CASING, DRIVE PIPE, SUCKER RODS,

PUMPS AND FITTINGS

OF EVERY KIND.

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At Oil City and Bradford, Pa.

MANUFACTORIES

At Oil City, Bradford and Summit City, Pa., and Bridgeport, Conn.

JOHN EATON, President, *Bradford.*

E. T. HOWES, Treasurer, *Bradford.*

KENTON CHICKERING, Secretary, *Oil City.*

THE PETROLEUM AGE.

VOL. I. BRADFORD, PA., JUNE, 1882. NO. 7.

PETROLEUM.

CHAPTER VII.

From July, 1865, to January, 1866—Origin of the Great Pipe Line System—Threats of Annihilation—A Banquet and a Boisterous Gathering—Success of the Miller Farm Pipe—More of Pithole's History—A Daily Paper—Conglomerated Society—Foot Pads—The First Fires on the Flats, Causing a Loss of $1,500,000—Decline of Pithole—Operations at Other Points.

THE question of shipping oil by pipe line had agitated the minds of various members of the trade for several years prior to the season in which it was successfully accomplished. The first line was originated and constructed under the supervision and management of M. E. Vansycle and H. C. Ohlen, of New-York, and Charles M. Noble, of Cleveland, Ohio. This was five and one-quarter miles in length, and stretched from Miller Farm on Oil Creek to Pithole. Work was commenced on the enterprise in August, 1865, and the line was successfully opened for business on the first of October following. Four pumps of medium capacity performed the function of forcing the liquid over the rough and hilly region, and it passed over so easily and nicely that the enterprise, which had been looked upon by many of the untutored as an experiment only, was now decreed an improvement on the former method of transportation, which was by team and wagon, or by water. The event was celebrated by a great banquet, at which all the leading capitalists of the country were in attendance. Pleasure, however, is said to be always alloyed by some dangerous ingredient, and this was as true of this case as any other. While the banquet was being enjoyed, another gathering in a more private portion of Pithole was discussing the practicability and feasibility of using the combined powers it possessed to "remove" the obnoxious instrument—the pipe line—and forever extinguish hope of its resurrection. This assembly was composed of the teamsters who had been enjoying a season of great success in hauling oil to the various shipping points, such as Titusville, Eagle Rock, Miller Farm, and elsewhere. These men looked upon the pipe line as an innovation upon their system of transporting crude petroleum, and came within a very limited space of adopting a measure which, had it carried the gathering, would have caused a riot of more than ordinary proportions. A resolution was offered and found a fair minority, at least in its favor, to the effect that all such enterprises as this pipe line were calculated to injure the laboring classes, and hinder them in the pursuit of their avocation. After the indulgence of a large amount of useless babble from a score or more of those present, and the squandering of several hours' valuable time, during which some of the most violent harangues ever heard outside the walls of Communistic Paris were engaged in, the meeting finally adjourned to meet at the call of the chair for further consideration of the subject. It is perhaps needless to add, the meeting never reconvened, and the pipe line remained to perform the functions for which it was conceived. It brought great relief to shippers and the trade generally.

The Pennsylvania Tubing and Transportation Company was the next venture attempted for the transportation of Pithole's immense stores. This was a product of the mind of Thomas C. Bates, of Syracuse, N. Y., and was of gigantic proportions. It was composed of 6-inch cast iron pipe, jointed as sewer pipe, and cemented. Its course was down the Pithole Valley from that city to Oleopolis, a distance of nine miles. It was commenced during the summer of 1865, and on the 10th day of December of the same year the first oil passed through it by gravity, and up to January 23, 1866, just 20,000 barrels were transported by the line, notwithstanding its daily capacity was 7,000 barrels. It never worked properly. The joints, like old "Betty's," gave out when a pressure was placed upon them, and the result was a serious loss of oil. The company was presided over by Joseph Casey, and David Kirk superintended the operation. Meanwhile the Miller Farm pipe continued to do good business. The rate of pipeage was first placed at fifty cents a barrel, and was soon afterwards reduced to forty cents, thus making a saving to shippers of from sixty cents to one dollar a barrel in cost of transportation.

The Titusville Pipe Company was organized in January, 1866, by H. E. Picket, George J. Sherman, and others, and the line was completed on

the first of April following. Two 2-inch lines were laid, and five steam pumps forced the precious substance over the ridges and ravines from Pithole to Titusville, a distance of nine miles. The cost of this enterprise was $120,000.

Prior to the completion of these two latter named lines, Henry Harley had in successful operation a 2-inch line extending from Benninghoff Run to Shaffer Farm, on Oil Creek, where a loading rack was constructed for shipment by rail, the Oil Creek Railroad being then largely engaged in the transportation of oil by cars. This, at the time of which we write—1865—constituted the extent of the Pipe Line system of the country. After the successful venture of Vansycles & Co., the practicability of that mode of transportation became apparent to every person of sound mind, and no new section was permitted to remain minus a pipe line any longer than the time necessary to construct the same. The business, in fact, grew to such mammoth proportions throughout the producing regions, that it commanded an amount of capital almost equal to that absorbed in the refining business, and is now one of the most important branches of the petroleum industry. At the proper time the subject will be treated more fully and minutely. In this record we have merely given the alpha of the business as a matter of history.

As Pithole, moreover, was the centre of attraction during this summer (1865), it may be of interest to the reader to know still further of operations thereabouts. It may be stated here that Pithole was a child of about six months' growth when it began to exhibit symptoms of an early decay. It had grown altogether too rapidly, and had neither head nor feet to support its great unproportioned body. At the time of which we write, July and August, it was at the pinnacle of greatness. Its title was a synonym for all that was brilliant and magnificent. The city shone out in the summer sun in a blaze of splendor — not exactly as the ancient Bagdad, or Palmyra or Babylon, whose brilliancy was seen in costly and beautiful specimens of architecture, grand public buildings, with mammoth domes and temple spires touching the clouds. It was not in these, Pithole boasted, for it had none of them. But it had people who possessed more solid cash to the square inch than ever Bagdad or Babylon boasted. And it had excitement, such as 1,000-barrel wells produce, and those only who have had experience can appreciate this. It possessed men who were full of enterprise, who, miscalculating the future of the place, were squandering wealth on new enterprises which promised—in the mind—fabulous fortunes. Among these was one especially that had been set on foot, but which, fortunately for the projector, died before it began to live, that should be mentioned here. This was none other than a silk factory, the owner having determined to import worms from Paris, France, for the purpose of producing his own stock. Pithole was measured by New-York, Philadelphia, Chicago and San Francisco. Such small towns as Pittsburgh, with a population of 200,000, were to be outstripped within a couple of years. Everybody interested in an oil well in the vicinity, or, in fact, in any other property, measured his future gains by the million. A fifty thousand dollar transaction was considered a small matter even by the party receiving the money.

As usual, in such cases, all the appliances for the conduct of rapid business were quickly added to the city's interests. The Western Union Telegraph Company had an office opened in June, and a regular post-office was opened by S. S. Hill, as postmaster, in July. Water works and proper fire organizations were effected. The city was the centre of a group of smaller towns, which sprang up like mushrooms on all sides. These were known as Prather City, Balltown, Adamsville, Dawson Centre and Clarktown. Prather City was situated a few miles down the creek westward from Pithole at Prather's Mills, where a number of wells were drilled, all of which proved worthless. Adamsville was located on the Hiner Farm, a mile east of the city, and Clarktown was situated on the Morey Farm, and was a suburb of the great city itself. Dawson Centre was a flourishing hamlet at the terminus of the plank road, or what was the terminus for a distressing period of time, about two miles east of Pithole, and Balltown occupied a beautiful sloping hill side south, and was termed the Algiers of America. It waxed strong for a season owing to the great prospect of obtaining oil in the wells then drilling on the hill side along the southern edge of the flats. This, for many years, was considered a very doubtful matter. Oil was falsely supposed to follow the lines marked out on the surface by the courses of the streams. For this reason the first wells drilled along the bluff at Pithole were located as close to the edge thereof as it was possible to place them. As developments succeeded, however, the groundless theory recovered some of its lost strength from the fact that the prolific area did not extend any great distance into the hill; in that particular locality,

of course, it was well understood, by the developments of later years, that the appearance of the surface had nothing whatever to do with the contents of the rocks beneath, but the delusion prevailed for some time among the masses.

In August of 1865, Pithole was visited by Col. L. M. Morton, with a view of establishing a daily paper. This resulted in the issuing on the morning of September 25th, of the *Pithole Daily Record*, by Morton, Spare & Co. It is said 1,500 copies were printed for the first issue, and the press had not ceased to act when the whole edition was exhausted, and single copies of the paper sold as high as one dollar. Perhaps 5,000 copies could have been disposed of, but the managers had not measured properly their capacity to tickle the sensibilities of their patrons. The first job work done at the office was for a chap who had erected a foot bridge over Pithole Creek on the Root Farm, and charged pedestrians ten cents a head for the round trip.

As regards Pithole society, it is, perhaps, needless to speak at length, as every reader knows that it was composed of people of all nationalities. It was a Babel, where people of all tongues and kindred under heaven, it seems, congregated, and where stranger met stranger face to face, and but few acquaintances existed. Such people, however, do not remain long without becoming interested in each other, and these citizens of Pithole were no exception. They had their society halls and club rooms as in other cities. Among these was one that gave to the city some political prominence, and was known as the Swordsman's Club. A true history of this organization is being prepared for THE AGE, and will be found of great interest, especially to those who inhabited the city at the time of its greatest glory and splendor. Sporting men found the city a most welcome resort during its early days, and prize fights on the surrounding hills were of frequent occurrence. Robbers and general "foot pads" infested the highways, and caused general fear of late hours remote from the heart of the city. "Your money or your life?" was perhaps more frequently uttered in dead earnest during the first two months of Pithole's history than in any other town of similar capacity in the United States. Nobody seemed to dare to go abroad unarmed. In this respect the place very much resembled some of the frontier towns of our great west mining regions. As the city attained organic proportions these difficulties, in a measure, were overcome, and the diabolical system abolished.

During the summer a plank road was constructed from Titusville to the city, which very much facilitated the transportation of goods to the place, as well as oil from the wells.

While matters were flourishing in the city the drill was being urged to an alarming extent on the flats, and the sales of oil interests multiplied from day to day. Many of the operators who have figured more or less prominently in the oil business through all the years since, were among those who flourished at Pithole. S. Q. Brown, of Pleasantville, F. W. Andrews, John Fertig, Sumner & Pratt, Fisher Bros., H. E. Picket, Phillips, Sherman Baum, Shamburg, Bronson Sherman, George Rice, L. Vernon Sullivan, Wade, Col. Ellsworth, and many others, whose names have not been secured because of their absence from the region.

The first of August found the daily yield of oil in the section about 5,000 barrels a day, and new wells adding with great regularity. On the second day of the month the first oil fire ever witnessed by the citizens occurred at the Grant Well. It broke out late in the evening, and caused a demonstration but seldom equaled in grandeur and brilliancy. The well was flowing at the time about 1,000 barrels a day, it is said, and in the large wooden tanks surrounding it there were stored many thousands of barrels, all of which was consumed. The total loss was estimated at the time at $250,000. It was a strange sight to the greater part of the population, who flocked to the scene by thousands. In addition to the large quantities that lay in tank, and constituted first-class material for the flames, the wells kept belching forth their contents, ascending high and forming grand pillars of fire that lit up the heavens and the earth for many miles around. It was a terrible night. Thousands of people who witnessed that scene, and are now residents of towns, cities and countries far removed from Oildom, will tell of its wonders to their children. Had they remained longer in the Oil Country, however, they could tell of scenes more awful in their grandeur and more terrible in their results, from a similar cause, than these. Oil fires have been quite numerous of late years, and, owing to the large quantities destroyed, the spectacle has been much more imposing than in the early days when only a few thousand barrels, at most, have been consumed. On the eighth of the same month another fire broke out on the flats, burning eight wells on the Holmden Farm and two on the Morey Farm, bottom lands, with all the oil and other property connected with them. The loss by this demon-

stration was placed at $1,500,000. The wells were quickly restored, however, to their producing capacities, and new tanks erected for the saving of the oil, and the work of sinking others progressed with a dispatch that was astonishing, considering the facilities at hand.

The excitement during August and September reached its highest point, so far as the disposition to invest in oil property was concerned. By that time many wells which had been expected to result in large gushers came to the front as dry as dust, and oil stocks began to decline in value at a rapid rate. In many cases tools were stuck, owing in part to the incapacity of drillers, and in other cases to the desire of the managers, who could hardly afford to strike oil, they having disposed of altogether too many shares for a fair division of profits. While there were some discouragements, however, in this direction, there were adding daily new ventures that gushed at a heavy rate, which aided somewhat in maintaining the reputation of the place as the great oil centre of the world. About the middle of September, Pool, Perry & Co. introduced the Pool Wells, and the Twins followed soon afterward, each doing about 400 barrels a day.

From this time on, till the 10th of November, though there were many discouragements and drawbacks to the business, it may be stated that everything pertaining to the commerce of the city flourished. On that day, however, it received a shock that told heavily upon its system. The U. S. Well ceased to pulsate, and sucker-rods had to be called in requisition to cause it to yield anything. Torpedoes had not been used to any extent up to this date, or doubtless the well could have been revived somewhat. The failure of the well caused considerable alarm, and oil interests that commanded enormous prices, being held at figures and estimates based upon certainties, so far as obtaining oil was concerned, began to be offered at reduced rates. It is true the price of oil was maintained at a high figure, bringing between $6.00 and $7.00 a barrel in September, and actually advancing to nearly $8.00 in October. This was owing to a decline which was permitted to occur in the production of Oil Creek and other points, as a result of the Pithole excitement, the attention of operators having been drawn in that direction to the exclusion of all other sections. The demand for the product during this year, 1865, was very strong. It is calculated that 2,518,000 barrels was produced during the year, and fully that much was demanded to fill the wants of the trade, though the actual consumption was not so great. This is placed at about 2,240,000 barrels, though it is possible that the figure is slightly above the actual facts. At all events the trade during the entire year was in a very healthy condition. Many large fortunes were lost, it is true, but this was owing to the reckless manner of investing money in all kinds of wild-cat ventures throughout the country, as well as immediately surrounding Pithole City. As a rule, those who purchased interests in wells, did so after calculating prospective profits on a basis of a U. S. flower to continue for all time. How badly they got left, in the language of the gamin, can be imagined, when, on the completion of the enterprise, a ten-barrel pumper or a dry hole was the reward obtained. In all the wells drilled in Pithole, numbering several hundreds, only three exceeded 1,000 barrels a day. A fair sprinkling ascended as high as 600 and 800 barrels, but the great majority that produced at all did not yield more largely than the average wells of Oil Creek or elsewhere.

During the month of November it began to be whispered about that Pithole had seen its best days, and on the 2d of December a kind of panic struck the city, owing to the unfavorable results of a number of wells in the vicinity, together with a collapse that occurred in the building and real estate market. Property seemed to depreciate so rapidly, that a man who refused to sell to-day at the price offered was forced to-morrow to accept 25 and 50 per cent. less. After this date Pithole was placed upon the declining list, and we pass into 1866 with a declining oil market and a somewhat increased production. On the first of the year the daily yield of the entire region was estimated at about 6,000 barrels, whereas at the close it was over 9,000 barrels. The market, which opened on the first of the year at $8.00 a barrel, had fallen at the close to $4.50. It was next to impossible to determine the exact amount of oil produced during the year in the Pithole section, but it bordered on 1,000,000 barrels. The oil was purchased principally by Cousins & Co., of New-York, represented by C. L. Wheeler, with head-quarters at Titusville, and by the Fisher Bros. and other dealers of Oil City, for the Pittsburgh trade. Pittsburgh, by this time, had become the great refining centre for the product in the Oil Regions. When pipe-line and railway facilities failed to perform the necessities of transportation, the Alleghany River was brought into requisition. Large quantities were hauled from Pithole to

Eagle Rock and Walnut Bend on the river, a few miles above Oleopolis, where storage and shipping facilities were provided on quite an extensive scale. These little towns, at the time, exhibited as much life and activity as even Pithole itself.

During the year, however, operations in other parts of the country proceeded with due diligence. At Tidioute, the mouth of the famous Dennis Run, territory was opened to the gaze of the oil trade, a number of small flowing wells having been obtained. Many Pithole operators made their way thither, and developments proceeded with remarkable haste. In January, 1866, the famous Shaw Well was struck, which yielded a volume of fluid, consisting of salt water and oil, that astonished the observer beyond measure. This was something new in the history of the business. The well was pumped with a rapid motion, and, being only about 150 feet in depth, the process was quite easy. The well was tubed with pipe having a diameter of three inches, and the working-barrel and valves corresponded therewith. Two 2-inch lead pipes conducted the fluid from the well to the receiving tank, and these pipes seemed to labor under a pressure in carrying the volume of fluid. At first the amount of oil received daily was something over 100 barrels, the remainder, 500 barrels, being salt water of the most briny type. It settled, however, to 75 barrels of oil a day, where it remained steadfast for a lengthy period, and was stated, in 1867, to have produced nearly $300,000 worth of oil. Perry Shaw, of Tidioute, owner at that time of the Shaw House, was the principal owner. During the fall of this year the Oil Creek & Gordon Run Petroleum Co. sunk two wells on the Henderson Farm, four miles west of Tidioute. In one of these a sand rock of superior texture, and 75 feet in thickness, was found, indicating a prolific field in the section. The well, however, never yielded any oil, which was owing, in part, at least, to mismanagement. The property afterwards passed into the hands of E. E. Clapp, Esq., of President, who developed it, reaping half a million or more of money from an investment of less than $15,000. Thus we find operations on the 1st of January, 1866, progressing westward on Dennis Run, and of the results that followed we shall speak in another chapter at the proper time.

About this time the tributaries of Oil Creek, above and below Petroleum Centre, principally above, began to attract the attention of the trade again. Pithole operators who had squandered much of their means found in Pioneer and the adjacent country a new world to conquer, and they lost no time in making preparations for the contest. Franklin territory had by this time descended to the lubricating scale in the trade, as most of the product there obtained was of that species. By it, however, many residents of that ancient city were vastly improved financially. The business was ever afterwards a great source of revenue to the people. Along the Alleghany River, all the way from Tidioute to Parker's Landing, a distance of about 100 miles, wells were sunk at regular intervals, in a few of which oil was found in small quantity. Between the former place and Eagle Rock all tests except near the mouth of West Hickory, six miles south of Tidioute, where a showing of oil was obtained, proved worthless. At Hickory, moreover, during the fall of 1865, some stir was created, and Pithole birds also flocked thither in great numbers. Over a hundred wells were put in operation there, and in a few instances, when completed, flowing wells of 200 barrels' capacity were obtained. The great difficulty encountered, however, was the limited duration of these producers. A well seldom flowed more than three days when it stopped short never to go again under any circumstances. As a consequence, the field was abandoned during the early part of 1866, and remained so ever afterwards. The two important points, therefore, to which the attention of the trade was directed at the opening of the spring campaign, were Tidioute and Pioneer, the latter being situated six miles south of Titusville, on Oil Creek. To these, and other sections, attention will be given in a future chapter.

(TO BE CONTINUED.)

AMONG the recently granted patents is one for the cooling of dwelling-houses, offices, hotels, etc., by means of compressed gas, which is conducted from a street main into the premises in pipes like ordinary gas. The compressed gas on being allowed to expand within a suitable receptacle produces a very low temperature. Thus the housekeeper, simply by turning the gas faucet, will be able to make ice, supply the dwelling in hot weather with cold air, and produce all forms and degrees of refrigeration with the utmost facility. Our houses being now supplied from the street mains with cold water, hot water, compressed gas, and electricity, we now only need, to complete the comforts of living, a milk main and tea and coffee mains; after which, perhaps, the public will call for soup pipes!

DEPARTMENT OF SCIENCE.

THE Railroad Commissioners of Massachusetts have adopted regulations requiring that all boilers for locomotives before going into service must be subjected to a hydraulic pressure of 150 pounds per square inch, good measure.

GLÜCKAUF reports that some of the Westphalian mines which suffer from poor ventilation are beginning to introduce a new explosive, manufactured at Düren, and called "nitrited guncotton." It is said to be as powerful as dynamite, without producing any obnoxious gases.

THE *Scientific American* says that Chicago is the greatest lumber market in the world. The single item of sawed lumber received there in 1881 would lay an inch flooring fourteen feet wide round the earth at the equator. The amount of lumber manufactured in the three States of Michigan, Wisconsin and Minnesota during 1881 would lay such a floor fifty feet wide.

CARBONIC oxide, as already stated, is credited with being the principal factor in gas poisoning, a question that could be quickly settled by the spectroscopic examination of the victim's blood. Two of the large gas works in this city supply us with gas still richer in carbonic oxide, sometimes reaching twenty-five or thirty per cent. It was expected that this would prove particularly fatal to its users, but accidents have thus far been fortunately few, which may perhaps have been due in part to its vile odor, which serves as a warning.

AN improvement in lifting jacks has been patented by Jonathan Beihl, of Slippery Rock, Butler County, Pa. The standard of the lifting jack is made in two parts, one part being formed with a channel extending from its upper to near its lower end, and the other part serving as a face plate to cover the channel in the first part. In the channel is placed a rack bar, which moves vertically, and which receives motion from a pinion journaled in plates secured to the face plate of the standard, and back of the plates is a slot in the face plate, through which the cogs of the pinion and of the rack bar engage.

ONE of the most convenient safeguards against possible poisoning by gas is to sleep with an open window where fresh air can always enter to dilute it in case of any escape. A person has been known to sleep in safety the entire night in a room where the deadly (?) water gas was escaping from an open cock at full head, the secret of his escape being the open window. Attempts have been made to construct automatic alarms that should report escaping gas, but none of them are so efficient as might be desired, are liable to get out of order, and are not likely to awake the person who is destined to be the victim.—*Scientific American.*

MANY investigations upon the relation between the molecular conditions of iron and steel produced by heat, by torsion, and by annealing processes, and the resulting changes in magnetic conditions, have been made. It appears from the paper of Louis M. Cheesman that the effect of mechanical hardening has not been properly investigated, and this paper contains the results of his investigation upon this point. The method of research consisted simply in determining the magnetic moment of the magnetic bar after it had been subjected to well devised mechanical presures. The result of his investigations is summed up as follows: Iron in a mechanically hard condition can receive more permanent magnetism than in a soft condition. The magnetic moment of a steel magnet in a mechanically hard condition is greater or smaller than in a soft condition, according as the ratio of its diameter to its length is less or greater than a certain limit.

DRILLING A SCIENCE.—Practically speaking, the drilling of oil wells has been reduced to a science so nearly perfect, that what was at one time considered an undertaking of great magnitude, fraught with many dangers to capital and "peril" to time, is now a mere matter of business, and a question of very short time, in ninety-nine cases out of a hundred. The tools and general implements now used are quite in contrast with those of former years, and what practical experience has always done for those who have chosen the mechanical branches of industry has been repeated in the matter of drilling artesian or oil wells. It is seldom in these days that we hear of a well being plugged by stuck tools, and in this regard it may be stated as a matter of wonder that such advancements should be made. In the early years the man who succeeded in getting a well down, at all, was considered fortunate. Perhaps not one well in 500 fails to go down after it is started in that direction, whereas about 25 per cent. in the early days never reached the destination intended. To science is certainly due this remarkable revolution in drilling the earth.

AT the Royal Institute, London, recently, Professor Ayrton explained a new system of

electric railroad devised by himself and Professor Perry. They claim that it constitutes a marked advance over the Siemens railroad, now running at Berlin. In the latter, the rails act as conductors, and have to be well insulated throughout. This, it is claimed, renders an electric railroad impracticable, except of short length. For an extended railroad, the Ayrton-Perry method provides a well-insulated cable, extending beside the rails, from which the current proceeds, and acts upon the propelling apparatus attached to the wheels of all the cars by passing through the well-insulated sections of the rails. The point is made that short sections of track may be well insulated for this purpose. The arrangement includes a device which permits only the section or sections in the immediate vicinity of the moving train to connect with the cable. This system, it is claimed, prevents leakage of the current. An apparatus is also provided which records by electricity the movement of the train as it proceeds, stops, or backs, by means of a shadow reflected on a chart showing the line of way. It also includes a "block system" for the automatic prevention of collisions.

About three years ago the French government appointed a commission to inquire into and thoroughly investigate the chemical properties of fire-damp in coal mines. Voluminous reports have just been made by the commission. From it we learn that the products of fire-damp vary according to the proportion of air mixed with it. When there is less than 9.5 per cent. of marsh-gas in the air, carbonic acid and water alone are produced; beyond that limit, however, carbonic oxide, also, is formed, and some marsh-gas and hydrogen remain unconsumed. The temperature of ignition of fire-damp is about 740 degrees Celsius; but it does not suffice, in order to ignite it, to carry one point of the gaseous mixture to that temperature. The contact of the explosive mixture and the heated substance must persist several seconds. Practically, the effect of this is to make the temperature above white heat, and a curious experiment is cited to illustrate this point. Let a jet of fire-damp be slowly directed against a red-hot iron crucible lying on its side. If the jet is directed against the exterior of the crucible for any length of time, the fire-damp is not ignited; but it will explode after a given time if the jet is directed toward the interior of the crucible. According to the researches of the commission, fire-damp is inflammable when it contains 5.8 per cent. of marsh-gas, and ceases to be so beyond a percentage of 16 or 17 per cent. The pressure developed by the explosion of confined fire-damp is about seven atmospheres.

Mr. Horace L. Trout, of Troutsville, Botetourt County, Va., has patented an improved manner of attaching boiler flues to the flue sheets, in which the flue sheets are of the ordinary construction, each provided with a series of opposite holes threaded on their peripheries. The flue for the passage of the products of combustion through the boiler is a straight tube, with a thread cut exteriorly on both its ends. The flues are connected to the flue sheets by copper nuts threaded on the outside to engage with threads in the hole in the flue sheet, and on the inside to engage threads on the outside of the pipes. In the ordinary construction the flues are inserted in opposite holes in the flue plates, and the ends of the flues are spread out and bent over or riveted to the flue sheets, and if it becomes necessary to remove a flue a skilled workman must be employed. By this construction it will be seen that the flues are detachable and can be inserted or removed by an ordinary workman, and they serve also as braces to the flue sheets. The inventor claims that by the employment of copper nuts a galvanic action is created between the copper nuts and the iron threads on the ends of the flue which prevents the iron threads from rusting, whereby their strength is impaired, and the copper nuts will not oxidize.

Suffocation by Coal Gas.—Cases of poisoning by illuminating gas are sufficiently frequent to make one suppose that greater care would be taken to prevent their recurrence. Not long since a man in this city attempted suicide by means of gas which he inhaled through the mouth, but the timely interference of neighbors prevented its having the intended effect. A few days later a Fall River steamer came to her pier with two of her passengers insensible from the same cause. Coal gas contains from five to nine per cent. of carbonic oxide, to which its effects are chiefly due. M. Tourdes says that *pure* coal gas is instantly fatal, but the case of attempted suicide, as well as the rare occurrence of fatal poisoning in gas works, where workmen are sometimes exposed to gusts of undiluted gas, makes this seem at least doubtful. The same authority says that one-eighth of gas will kill a rabbit in five minutes, and one-fifteenth in ten to fifteen minutes. In one case that proved fatal Dr. Taylor estimated the quantity at three per cent. Even small quantities, which are only per-

ceptible by their odor, cause unpleasant symptoms, headache and nausea, if inhaled for a long time. Time seems to be an important factor in gas poisoning, for in most cases where persons are exposed to its influence for a few hours they can be resuscitated, but if left a longer time this is not possible.

BITUMEN is known to exist in many parts of the world, and the question is frequently asked, "What is it?" To answer the query would be to perform a task never yet accomplished fully by any person. Its origin is a mere matter of speculation, and not a few ascribe to it petroleum properties and characteristics. Of course, its elements are similar, being a compound of carbon, hydrogen and oxygen, but these are so peculiarly "yoked" in it that it seems impossible to form even a plausible theory as to how or in what manner it came into existence. It is found most abundantly in the Island of Trinidad, where it exists in solid beds, whose dimensions are unfathomable. On this island there is a lake called Tar Lake, the odor or smell from which may be detected a distance of ten miles. It is also found in great abundance in the vicinity of the Dead Sea, France, Cape Verd, Burmah, South America, and even along the coast of the Gulf of Mexico. Bitumen is very combustible, burning with a very thick smoke and a bright flame. The ash it leaves varies with its pureness, and consists chiefly of silica (sand), alumina (clay), oxide of iron, lime, and maganese dioxide (a substance used in the laboratory for making oxygen gas, and it has the advantage of being able to give off its oxygen readily when heated in a retort). It melts at about the temperature of boiling water. Distilled by itself, it yields a very peculiar bituminous oil, little water, some combustible gases, and traces of ammonia. The oil has a very powerful odor and is of a yellowish brown color.

WHO SPECULATES IN OIL?

BUT few people outside of Oildom have any idea of the extent to which the mania—if such it should be termed—for speculation in oil, contiguous to the seat of production, pervades every community. The dealers and brokers who constitute the noisy crowd who surround the bull ring of the oil exchanges are not the only ones who engage in the business of buying and selling oil or, more properly speaking, of going short and long in the market. Occasionally a broker or dealer may be seen casting a glance at the gallery, where can always be seen a number of spectators, who seem very much interested in the course that prices are taking. Sometimes a nod from above causes a broker to go in wildly to sell or buy and, of course, any one can understand this. The broker simply operated according to the wink. But there are others still who are never seen at the exchange, nor are they ever known, beyond their broker, to have anything to do with the oil market. This class is composed of clerks in stores, banks and other offices, merchants in all conditions and tradesmen of all standing in life; dining-room waiters of both sexes, and barbers, who shave for a dime, milliners and dressmakers and peanut peddlers, hackmen, milk-dealers and those sometimes who "huckster" for a livelihood. In Bradford at least one dealer from every calling named can be found and from many they are very numerous. Sad would be the tales that some of these could tell, were they so disposed, of losses entailed in this remarkable gamble; but they choose to keep their own secrets. A few are sufficiently fortunate to succeed in adding quite largely to their meagre store of wealth, and this is frequently the cause of large additions to the speculative class.

OIL FROM PINE TREES.

AN important industry, says *La Nature*, has sprung up within the last few years in the French Department of Landes, through the enterprise of M. Charavil. It consists in the extraction and application of oils from pine. These oils are of two sorts—the heavy (pinoleum) obtained by distilling the resinous wood at a low temperature and used for painting and wood preserving; and the light oil for illumination, got by distilling in special apparatus, and purified with chemical agents. This light oil has the same chemical composition as oil of turpentine ($C_{20}H_{16}$), and distils at the same temperature (150° to 160°), but has the advantage of not turning into resin. It contains neither pinic nor sylvic acid. As it does not emit vapors, except at a high temperature, its use for lighting purposes is quite safe. Its luminous intensity is said to be greater than that of petroleum; it contains 88 per cent. of carbon, while petroleum has 82 per cent. Two similar burners showed the pine oil to have an advantage of 33 per cent. in luminous intensity; the consumption is also less.

THE Oil Well Supply Company is opening a store at North Clarendon, Pa.

LIGHT-HOUSE OIL.

AT the village of Tompkinsville, Staten Island, are the offices and work shops of the Light-House Board of the United States. Here are manufactured all the lamps in use in the various light-houses, and here also is tested the oil to be consumed in this extensive service. There are now upward of eight hundred light-houses scattered at different points along our coast, not to mention the numerous light-buoys and ships stationed in localities where light-houses are impracticable. Four different sizes of lamps are in use, varying from those with one wick to those in which four are required. These lamps are the invention of Mr. Joseph Funck, for eighteen years in the employ of the Department. The three smallest are constructed for the burning of kerosene, and the largest for lard oil. This arrangement, which is the result of long experience, is made necessary by the peculiar behavior of kerosene under certain conditions. After a given point has been reached in the size of a kerosene burner the photometric power of the light becomes diminished instead of increased. Whereas the contrary is true of lard oil. These two oils give equally satisfactory results in lamps of the second or third order, but in those of the fourth order the mineral oil is decidedly preferable, and in the first the lard oil. So that both kinds are employed notwithstanding the fact that lard oil is much more expensive.

WHERE DOES OUR OIL GO TO?

THE increased demand from abroad for refined petroleum, which has caused a pressure upon the works of the principal manufacturer, has caused the question to be frequently asked, "where does our oil go to?" It is well known that China, Japan, British East Indies, Dutch East Indies, England and Germany have largely increased their demand for our product during the past year. It was calculated early in the season that the total demand of the present year would reach the interesting altitude of 71,000 barrels a day. This, it is now believed, will be rather below than above the figure. Of course, the daily production exceeds this amount by more than 7,000 barrels per diem; that is, the net marketable production, and is liable to be kept at or above this for some time. But in order to show the position of trade this, as compared with last year, the subjoined table, furnished by the *Drug Reporter*, is presented. This record is up to May 20th:

REFINED.

COUNTRIES.	1882. *Gallons.*	SAME TIME 1881. *Gallons.*
Africa	1,087,560	892,122
Algiers	261,950	. . . . .
Argentine Republic	521,298	551,100
Australia	1,826,428	1,726,053
Austria	1,256,132	2,145,279
Belgium	5,141,751	8,330,143
Brazil	1,476,745	2,293,608
British East Indies	11,050,860	2,342,000
British Guiana	218,092	98,870
British West Indies	520,545	644,972
Canary Islands	38,258	. . . . .
Central America	72,370	86,053
Chili	393,450	137,000
China	8,859,540	2,907,320
Cuba	329,916	535,027
Danish West Indies	19,846	20,430
Denmark	3,368,826	2,403,284
Dutch East Indies	10,055,860	7,707,020
Dutch West Indies	27,934	63,428
Dutch Guiana	7,000	12,000
Ecuador	70,240	21,000
England	20,574,212	11,547,760
Egypt	1,159,600	758,360
France	112,225	59,180
French West Indies	97,080	101,500
Germany	35,160,284	23,153,112
Gibraltar	32,500	959,960
Greece	101,260	370,780
Hawaiian Islands	. . . . .	29,650
Hayti, etc.	177,739	230,068
Ireland	1,888,345	1,732,067
Italy	630,430	750,692
Japan	6,574,840	4,030,920
Mexico	430,888	467,012
Malta	120,000	142,600
Mauritius Island	. . . . .	. . . . .
Netherlands	5,137,811	5,723,517
North America	169,288	113,760
Norway and Sweden	2,454,945	2,345,426
Peru	80,000	116,000
Porto Rico	209,931	116,794
Philippine Islands	162,290	. . . . .
Portugal	807,007	1,450,818
Reunion	77,000	. . . . .
Russia	829,446	342,413
Scotland	. . . . .	. . . . .
Siam	163,500	. . . . .
Spain	4,000	887,342
Turkey	2,121,229	2,430,453
United States of Columbia	75,362	51,503
Uruguay	624,750	593,790
Venezuela	203,545	242,015
Total	127,048,698	90,942,261

CRUDE.

COUNTRIES.	FOR THE WEEK. *Gallons.*	PREVIOUSLY. 1882. *Gallons.*	SAME TIME 1881. *Gallons.*
Australia	. . . . .	10,000	. . . . .
Cuba	70,000	1,286,535	293,094
Dutch West Indies	. . . . .	516	. . . . .
France	. . . . .	6,245,994	3,335,747
Germany	. . . . .	746,135	817,143
Mexico	. . . . .	32,304	. . . . .
Portugal	. . . . .	89,170	. . . . .
Spain	274,560	3,784,604	4,792,516
Sweden	101,947	. . . . .	. . . . .
Totals	446,507	12,198,558	8,929,251

THE Cadwalader Well, No. 2, the first opened near "646," after filling the first tank, flowed about 2,000 barrels a day on the ground. It was opened, June 2d, by running the bit less than two feet into the sand.

IRON TANKAGE.

DURING the month of May there were nineteen new large iron tanks added to the storage capacity of the region, aggregating 683,050 barrels. They are located as follows:

Location.	*No. of Tanks.*	*Owner.*	*Capacity.*
Wellsville	5	United Pipe Lines.	186,700
Colegrove	2	"	71,950
Bolivar	1	McCalmont Oil Co.	35,450
Olean	10	United Pipe Lines.	352,950
Clarendon	1	Union Oil Co.	36,000
Totals.	19		683,050

Half a dozen others have been added during the month, four of which were about completed, in the Allegany field. The rush for this class of storage is very great at the present time, and will be still greater during the next three months.

THE OIL SITUATION.

THERE has never come a time in the history of the oil business, however distressing it might have been, when it might not or could not have been worse. The same is true of the situation to-day, though it would, at first sight, seem almost impossible for even this small hope to be entertained. The unknown quantity of Cherry Grove, Warren County, is what troubles the most astute calculator. Here is an algebraic equation that puzzles everybody. This new and extraordinary rich deposit has no positive boundaries, as yet, unless several miles in width, and fifteen or twenty in length, are taken as the basis. That such a scope should prove to be 1,000-barrel territory would seem to be out of the question, but that a fair percentage of a belt three miles in length, from northeast to southwest, and of limited (it is hoped) diameter, is of the class named, there is no reason for doubt. The map and comments thereon, printed in another place, fully explain this. But the point at issue is, to what straits is the trade coming in the matter of over production? It would be well, of course, to always keep in view the fact that so long as a wild-cat well is kept in operation between Bradford and West Virginia, on a scope of country designated by the map found in the January AGE, there will be danger of a fresh pool, of greater or less capacity, being developed. Now, this is all right in its way, but there is another view to take of the situation, which arises from a comparison of the relations *existing to-day* between the amount produced and the amount that will be required to supply the world in the future. Of course, everyone knows the depressing effect that prospective production in new fields has upon values, and everyone has wondered why it is that oil should remain above fifty cents a barrel since the opening of the Cherry Grove section, to which "everybody" grants an almost unlimited supply. This, as yet, is mere fancy, of course. Many of the wells yet to be drilled may be large; but is it reasonable to suppose that because three wells have been obtained that are of this class, all that are yet to be sunk in the wilderness must so result? Better wait with a little patience, at least, a portion of the outcome. Sorrow and sighing come soon enough without invitation, and the idea of moralizing upon the terrible distress that is to visit the region because of what some see proper to term a 100,000-barrel production in the new field alone is simply preposterous. Of course, present appearances would indicate a very large increase but there are always drawbacks, that cannot be forseen. The trade is more liable in such cases to overestimate the capacity of the new field than to underrate it. The area of territory considered favorable for large wells is generally made larger by paper and pencil than facts prove when they become known. Nevertheless, it is not safe to attempt restriction in the matter to too great a degree. Grant all possibilities and probabilities to the field, and yet a ray of hope springs out of the darkness that must be seen by every person interested. This is seen in the constant increase in the uses of the article. It was supposed, during the early months of the year, that production and consumption must come to a point approximating equality sometime during the year, and this would certainly have been the case in the absence of the Cherry Grove development. This is one of those strange results and unfortunate *finds* that so frequently occur in the Oil Regions. They come in just where least expected, and generally at a time when they do the most injury. For that reason all wild-cats and wild-catters should be placed on the deplorable list.

But, furthermore, what are the prospects for the future? The immediate has nothing before it but depression. The distant is more bright. While Warren County must largely increase its yield, the northern district must largely decrease. Bradford, which is now turning out about 46,000 barrels a day, must descend to 25,000 or 30,000 during the year. Allegany, with her 22,000, has squared herself for a fair decline, and these together must certainly make room for some of Warren's increase. It is, perhaps, not unfair or unjust to assume a daily decline in the

two former of 25,000 barrels by the first of January, 1883. This will require 25,000 of Warren's surplus to fill. Beyond this the stocks of Warren must continue to enlarge materially.

It is thought by some that the great gush of Warren or Cherry Grove, with its consequent increase of production and decline in price, constitute a short route to $1.00 oil. It is, however, true that the route would have been much shorter had this unexpected luminary kept itself below the oil horizon. As it is, we can only take the matter just as it is. The production of the field is increased as yet only a few thousand barrels. There will be room made for 25,000 during the year. After that the amount received must go to swell the stocks on the surface. The question of values arises here, and it is one easily solved. The capitalist who will not invest in an article when offered at a price below cost of producing, with a strong probability that a year hence will find the article in increased demand, does not care to speculate. It is only a question of time with Warren County, no matter how large it may prove to be. It must exhaust rapidly. Its conglomerate is of that character that its contents are drawn off with great haste. So it may be possible that the dark and dismal day of a hundred thousand increase may never come.

COST OF DRILLING.

THE cost of producing oil is always determined in any given section or district by the capacity of the wells to produce. In the Bradford field those capable of ascertaining this point, having drilled hundreds of wells, assert that the first cost of a barrel of oil is about 60 cts. Any price received above that figure may be rated as clear profit on the business. If a man possesses ten wells, whose average is ten barrels each per day, his net earnings amount to just $40.00 a day by this method of calculation, providing oil is worth $1.00 a barrel. But in the Bradford field the average is much less, not exceeding at the present time four barrels to each well, and, as a consequence, the profits arising from ten wells would be much smaller. But when the price drops below the sixty cent. point there is an unpleasant vacuum created. About this it is unpleasant to speak.

In Richburg or Allegany the cost does not exceed forty-five cents a barrel, all above that price being clear gain to the owners. In Cherry Grove it will, of course, be even less, but how much cannot be stated at present.

FIGHTING RIGHT OF WAY.

TWO years ago right of way was obtained by certain parties, through Lycoming and other counties in Pennsylvania, for the laying of a pipe line for transporting oil from the northern field to Philadelphia. Last winter the Tidewater pipe line, which created such a sensation and awakened so much hope in producers' minds when it ran its line to Williamsport, concluded to extend its line to tidewater near Philadelphia. In this it has met, and is meeting, with considerable opposition, and is now having a big fight near Muncy. It is necessary that it by some means gets the right of way across the exclusive right of way previously obtained by the other pipe line projectors. This attempt is made near where that right of way crosses Muncy Creek, and near the farm of George Bieber.

Mr. Bieber claims that the Tidewater people took advantage of him in this way: They have agreed to lay their pipe along the bank of the creek which bounds his farm, where it would do him comparatively little harm, and that in filling up the release they so worded the paper that it gave them the right to cross his farm as they please. Mr. Bieber asked and obtained a preliminary injunction from the Lycoming County Court, and, after a hearing, the court dissolved the injunction. But the Tidewater line, in order to reach tidewater, must get across the first-named right of way, and, therefore, says a correspondent of a Williamsport paper, there is much more ahead than a simple lawsuit with Farmer Bieber.

Mr. Bieber insists that he will push the case to the bitter end in a suit in equity and otherwise. If he should win, the Tidewater line would be in a bad condition. If the Tidewater line wins as against Bieber, the next obstacle will be, or already is, the opposition presented by the owners of the exclusive right of way, obtained two years ago. This, doubtless, will involve a big suit, for big stakes are involved. If the Tidewater line loses, its operations would be effectually blocked. This result would be a large loss, as the Tidewater line is expending large sums of money in laying their line beyond the point of controversy, and if the gap cannot be filled the money will be worse than wasted. The large amount of capital involved accounts for the extreme bitterness of the contest.

It is claimed by the Tidewater people that there is a vacant, or unseated, piece of land lying in the bed of the creek. This they claim they

will secure a patent for from the Commonwealth, and thus get their right of way across the previous right. To this claim strenuous objections are made, those interested claiming that this is one of the oldest sections of the county; that there has been no serious interference of original warrants as laid by the surveyors; that there is no vacant land in this well-settled and long-cultivated valley, and that the claim is but a legal subterfuge.

"WHO IS TO BLAME?"

IN the April number of the AGE this pointed question was propounded to producers, but was answered in the same article by the statement that producers themselves were to blame for the present unsettled condition of things in the oil trade. While the AGE has held forth the beautiful side of the picture, as well as giving the facts in relation to affairs in the producing fields, yet it never failed to throw out a word of caution to those who were struggling to not only increase the number of their producing wells at a remarkable rate, but also to enlarge their daily production. The manner in which business was urged in the Allegany field outstripped all former effort, except, perhaps, in 1873 and 1874, when the daily yield was driven up from 16,000 to 45,000 barrels, with a daily consumption of less than 21,000. This was occasioned by the striking of a fourth sand in Butler County, which was found underlying the regular third sand at Petrolia, and stretching across an area at right angles with the third sand, a distance of 8 miles from east to west. Its diameter measured about 1¼ miles, and over nearly the entire area thus marked out wells ranging in capacity from 20 to 1,200 barrels a day were regularly obtained. A well that did not exceed 100 barrels was considered a small affair. The production of the field increased so rapidly, by excessive drilling, that the crude market was glutted and prices dropped until 50c. a barrel was the ruling price for some time, with many sales as low as 40c. a barrel. The sheriff of Butler County found his hands full of business in the execution of writs against delinquent producers, and his placards were discovered on many a derrick as well as building and wayside stump or tree throughout the region. It was a time of great distress, and all because of over production. Out of that terrible flood, however, came vast and valuable benefits to the petroleum industry at large. The remarkable and unexpected cheapness of the article was the cause of its being introduced in foreign countries where its presence, prior, had never been felt. It entered as a competitor in the illuminating markets of all the principal parts of Europe, and also descended into the cottage and tent of many an inhabitant of Asia and Africa, where it was received as a strange but welcome guest. But while these results were being obtained, many an unfortunate producer of the product was driven to the wall, financially, and some, even at this day, have not rallied from the shock then received. Some were only maimed, but they are still limping. Thus while a few, who were capable of maintaining their position by holding on to their production and producing property, realized large gains when the tide ebbed, the great mass of producers suffered losses that required years to regain. All that trouble might have been averted by a more moderate use of the drill. Just so in the latest example of this excessive folly, over in Allegany. Many of the operators, who are now dodging bankruptcy, had they moved more slowly in the work of drilling, would have been much more effectually fortified against the storm of depression and disaster that has so recently assailed our otherwise prosperous region. It is estimated that the depreciation in the value of real estate and general producing property, together with oil stocks, which has occurred since the striking of "646" in Warren County, amounts to at least $30,000,000. Thirty millions is a large amount of money, and yet the drilling of one wild-cat well caused this loss. Even this might be suffered in the absence of what follows. There are to-day hundreds of men who would gladly seize the first opportunity to drill in the neighborhood of the latter strike. Many are doing it, though "50c. oil" has been winking at them for a month. Is there no remedy for this mania? It would have paid the operators of the country largely to have purchased "646," after she made a showing, at any price from its true value up to a million, and gagged it, together with every man who should attempt to drill a well in the latitude until the proper time, which would have arrived in 6 or 8 months hence. As it is, the trade is compelled to bear the burden of large stocks with that of an unknown quantity lying beneath the surface of Warren County for months to come. It is to be hoped yet that some lessons may be learned by the folly exhibited in McKean in 1879, and Allegany in 1882, and that Warren operators will prove to be the tutors. If not, "who is to blame?"

RUNS, DELIVERIES, STOCKS.

TABLE showing the April and May Pipe Line Runs and shipments, with stocks, on May 31st, 1882—official.

District.	Receipts, Pipe.	Barrels, April 30.	Barrels, May.
Bradford	United		
Tidioute&Titus'e,	"		
Lower Country	"		
Warren	"		
Monongahela	"		
Total	"	2,145,965.63	2,339,170.39
Bradford	Tidewater	206,518.25	252,019.93
Warren	Union Oil Co.	38,217.01	49,501.60
Titusville	Octave Oil Co.	4,575.17	4,579.06
Oil City	Charley Run	308.55	445.27
Shaffer	Shaffer Run	590.00	534.00
Franklin	Franklin Pipe	6,644.88	6,224.60
Total all Lines		2,402,819.49	2,652,474,85
Average per day May			85,563.70
Average per day April			80,093.98
Average per day March			83,724.96
Average per day February			83,547.40
Average per day January			71,855.35

Deliveries.

District.	Pipe.	Barrels.	Barrels.
All Points	United	1,381,093.10	1,496,566.23
Warren	Union Oil Co.	19,824.79	28,632.54
Titusville	Octave	4,216.18	5,498.19
Franklin	Franklin Pipe	6,039.35	6,110.00
Shaffer	Shaffer Run	546.43	725.01
Oil City	Charley Run	268.63	92.62
Bradford	Tidewater	266,045.12	247,634.56
Total deliveries		1,678,033.60	1,785,259.15
Total Runs		2,402,819.49	2,652.474.85
Am't of Runs in excess of Shipm'ts,		724,785.89	867,215.70

District.	Pipe.	*Net Stocks April 30.* Barrels.	*Net Stocks May 31.* Barrels.
Oil City	Charley Run	3,375.00	3,733.73
Bradford	Tidewater	2,260,824.82	2,275,286.08
All Districts	United	25,526,101.30	26,356,830.17
Shaffer	Shaffer Run	25,915.73	25,845.33
Warren	Union Oil Co.	132,376.38	151,750.60
Titusville	Octave Oil Co	9,880.29	8,959.60
Franklin	Franklin Pipe	11,410.96	11,310.00
Total May			28,833,715.51
Total April			27,969,884.48
Total March			27,252,806.93
Total February			26,414,274.36
Total January			25,788,071.79
Increase May			863,631.03
Increase April			717,077.55
Increase March			838,532.57
Average increase per day, May			27,859.06
Average increase per day, April			23,902.58
Average increase per day, March			27,049.44
Average increase per day, February			22,364.00
Average increase per day, January			12,174.73

PRODUCTION BY FIELDS FOR THE MONTH OF MAY.

District.	*Month.*	*Barrels.*	*Decline.*	*Increase.*
Bradford	May	46,883	1,982	. .
Warren	May	3,280	. .	1,020
Lower Country	May	6,000	205	. .
Allegany	May	22,438	. .	2,438
Totals		78,601	2,187	3,458
Increase over April,				1,271

MAY SALES.

FOLLOWING is a summary of the sales of oil at the Bradford, Oil City, Pittsburgh and New-York Oil Exchanges during the month of May. Nothing less than 1,000 barrel certificate ever sold; each barrel represents forty-two gallons:

	BRADFORD.	PITTSBURGH.	OIL CITY.	NEW-YORK.
January,	23,885,000	11,441,000	27,163,000	
February,	19,412,000	9,153,000	22,207,000	
March,	27,467,000	13,208,000	29,448,000	
April,	22,245,000	8,325,000	19,171,000	15,000,000
May,	39,777,000	21,814,000	38,402,000	35,000,000

Average runs and shipments each month of year to May 31st:

	Total Daily Runs.	Bradford Daily Runs.	Total Daily Shipm'ts.	Bradford Shipm'ts.	Charters.
January,	70,401	62,229	55,798	40,864	33,877
February,	81,853	72,825	63,062	47,183	43,075
March,	81,186	65,758	53,489	38,963	41,080
April,	80,158	67,392	54,413	35,662	35,453
May,	83,397	75,472	56,478	43,329	47,220

PETROLEUM is recommended by Prof. C. V. Riley as a destroyer of scale insects. He says nothing is more deadly to the cotton worm in all stages than kerosene. Following is the composition recommended: Kerosene, two parts, sour milk, one part — in other words, twice as much kerosene as milk. Churn in a common churn until the whole solidifies and forms an ivory white, glistening butter, as thick as ordinary butter at a temperature of 75° F. If the temperature of the air falls below 70°, warm the milk to blood heat before adding the oil. In applications for scale insects the kerosene butter should be diluted with water from twelve to six times, or one pint of the butter to one and one-half gallons for chaff scales; one pint of butter to two gallons for long scale. The diluted wash resembles fresh milk, and if allowed to stand, in two or three hours the emulsion rises as a cream to the surface. The butter should, therefore, be diluted only as needed for immediate use, and the mixture should be stirred from time to time. A wash prepared in accordance with the above directions will kill, with certainty, all the coccids and their eggs under scales with which it can be brought into direct contact. No preparation known will, however, remove the scales themselves from the tree, or in any way reveal to the unassisted eye the condition of the insects within. This can be ascertained only by microscopic examination of detached scales. Time alone, and the condition of the tree itself, will indicate the result of an application.

CONGLOMERATE.

Russia produces 13,000 barrels of oil a day. About one-half of it is used for lubricating purposes.

A well is being drilled on the Cooper tract, south and east of the old Blue Jay Well, in Warren County, by Manwaring and others.

At Bath, N.Y., it is to be presumed, will be the next excitement in oil. The well now drilling there should be completed this present month.

N. C. Clark has enlarged the possibilities of Allegany by getting a fair producer on lot 18, Clarksville, half a mile northwest of the Parkman Well.

In 1877, Shaw Bros. & Green drilled a well on lot 573, Watson Township, Warren County, in which regular sands were found corresponding favorably with the rocks of Clarendon and "646."

L. Emery, Jr. & Co., are represented in North Clarendon by Mr. Minnis, who served the company as chief clerk in their Bradford store for many years. The firm have a large stock at that point.

Five hundred certificates of 1,000 barrels each were issued at the United Pipe Office in Bradford, June 3d, leaving the credit balances lower than they had been for several years. Somebody was selling.

The McCalmont Oil Co., with the substantial David Kirk at the head, has made a large purchase from Mr. Murphy on lot 619. This consists of seventy acres in fee, at $1,000 an acre. The company has since leased the property at one-half royalty and $300 an acre bonus.

A Bradford operator has been contemplating making another test for oil in the vicinity of Alton. He finds it very difficult to obtain a site big enough for a respectable belt to pass between any two of the cordon of dry holes that exists between that town and the Kinzua development.

The Town of Garfield is located on lot 646, near the southeast corner of same. It is beyond question destined to become a place of some importance. The Warren Narrow Gauge Railroad from Clarendon is graded nearly half way to the new city, and another is promised from Sheffield.

The pipe line in Russia which has been constructed over the Caucasian mountains, from the Coubau oil territory to Novoroszisk Harbor, on the Black Sea, and which was opened on Saturday last, is fifty-two miles long, and has a capacity of about 4,000 barrels a day. This line is a long stride ahead in the petroleum business of that country.

On the Tidioute Island, in the Alleghany River, opposite the mouth of Gordon-Dennis Run, there was an oil well that flowed a barrel a day from 1865 to 1873, when an ice gorge and freshet put its light out. A peculiarity of this well was the fact that it would not pump a gallon, but would flow through inch pipe as above stated.

E. G. Grude, C. E., of Angelica, N. Y., has just issued a map of the Allegany, N. Y., oil field. It is modeled somewhat after the style of the Age map of the field published in March last. It will be found quite convenient as a pocket-guide to that field, and is sold at the moderate cost of a dollar and a half. Wentworth, in Bradford, and the prominent newsdealers elsewhere sell it.

The Union Oil Company owns a very rich tract of land at Kinzua. The company completed a well there about May 26th that flowed over 200 barrels a day for about a week. It is doing now, June 10th, over 100 barrels. The tract consists of 5,000 acres, and occupies the whole southern end and terminus of the Kinzua oil deposit. Quite a percentage of the tract is valuable oil territory, and the company, in May last, sold $30,000 worth of cherry timber from it.

It is stated, on good authority, that Mr. Murphy, of the Murphy Well, lot 619, Warren County, has about 600 acres of land surrounding his well. This land cost him from $50 to $200 an acre, and he is now selling portions at $1,000 an acre. It is also claimed that he could dispose of his interests there to-day at a profit of upwards of half a million dollars. This, in less than three months' time, and yet there is no money in the oil business! It beats railroad stocks even now.

Two producers stood at the corner of Congress and Main the other day, each holding a small wallet in one hand. As the Age man passed, he overheard the remark, "Is mine as close as yours?" Though the answer was not heard, yet the question itself was quite suggestive. The gentleman who propounded the problem had first elevated his hat, exhibiting a closely-cut head, upon two-thirds of which a June fly would run the risk of slipping up and breaking his neck. Bald heads and bare wallets! It was the head, not the wallet, to which he referred.

THE ALLEGANY FIELD.

TABLE SHOWING THE PROGRESS OF DEVELOPMENTS AND PRODUCTION OF THE ALLEGANY (N. Y.) FIELD.

Month.	No. of wells completed.	Dry.	Production. Bbls.	Average per well.	Daily Production of Field. Bbls.	Drilling.	Rigs.	Stocks in wooden tanks. Bbls.	Stocks in Iron tanks. Bbls.
Total, 1880	8	42	76	9½	76	4	6	. . .	. . .
Jan'y, '81,	4	2	18	9	94	4	5	. . .	. . .
February	4	1	24	6	112	4	8	. . .	. . .
March .	5	2	60	12	162	4	7	. . .	. . .
April . .	3	1	20	10	170	5	6	. . .	. . .
May . .	4	1	48	12	212	20	21	. . .	. . .
June . .	14	8	130	9¼	327	24	35	. . .	. . .
July . .	22	5	275	12½	588	47	57	. . .	. . .
August .	53	17	586	11	1080	62	68	. . .	. .
September	63	11	910	14½	1740	105	118	. . .	. . .
October .	96	5	1432	15	2896	164	198	38000	108891
November	154	10	2732	17½	5180	155	200	84666	142216
December	196	2	5115	26 1/10	8937	187	204	180200	169250
Jan. 31, '82,	162	2	3914	24 1/6	11123	191	209	270860	243147
Feb. 28th	189	4	4154	21.97	13200	212	201	373460	258247
March 31st	216	2	5580	25.83	16000	215	221	374490	359347
April 30th	257	6	6356	24¾	20760	226	230	400000	417347
May . .	265	7	5992	22⅝	22438	179	191	440000	542347

The Allegany field has ceased to perform the function of market masher. It has had its day like all other small or medium districts, and now passes out, not like a meteor in the heavens, but more like a lingering evening star whose light still remaineth after the sun has gone down. It is to be regretted that the territory was so effectually slaughtered in so short a time. Hundreds of operators who went there poor and by good fortune and better energy succeeded in obtaining a nice production, and had pictured in their minds, gains of the order of tens, twenties, thirties and even higher in the thousands, now press their lips and heave a sigh and exclaim: "If it were not for '646' I should have made it sure." Some, of course, succeeded in selling their property before the fall in values, and they are happy. But, there is little cause for alarm to the buyer of it, even at this writing. We are having a big shower it is true, but it cannot last always, and Allegany will probably live to witness another boom in her territory.

The drill has been suspended in many parts of the field where it should have been strung up months ago. The number of wells to be completed each month in this field in future must diminish gradually, and the daily yield, which at one time reached 23,000 barrels a day and upwards, has taken a slight set backward, the aggregate for May being 22,438, and at present it is not so large.

The Shaw Well, on lot 573, four and one-half miles northwest of "646," was drilled several hundred feet below sea level. All the sands were found, but no oil, except at the level corresponding with Clarendon, where there was some show.

MAY OFFICIAL QUOTATIONS FOR CRUDE.

THE following table shows opening, highest, lowest, and closing quotations at the Oil Exchange each day.

	Opening.	Highest.	Lowest.	Closing.	Avg.
1	75	75	73½	73⅞	74¼
2	73⅞	74⅝	73¾	74⅜	74¼
3	74¼	74¼	72½	72½	73⅜
4	72⅛	72⅝	71¼	72⅝	71⅞
5	72⅝	73½	72⅝	73¾	72¾
6	72⅝	73½	72⅝	73¼	73
8	73¼	74⅞	73⅛	74⅞	74
9	74⅞	74⅞	72⅝	72½	73¾
10	72½	75⅜	72¼	75⅜	73⅜
11	75⅞	76⅜	74¼	74⅞	75¼
15	74	75⅞	74¼	75⅛	75
13	75½	75⅛	74½	74⅝	74¾
15	74¾	74½	73	74	73¾
16	73¼	74¾	73⅜	73⅞	74
17	73½	73¾	73¼	73½	73½
18	73¼	73¾	71¼	71¼	72½
19	69¾	69¾	65	65	67⅜
20	64½	68¾	64¼	67⅞	66⅝
22	66⅞	67⅛	65¾	66⅜	66⅜
23	66¼	66¾	63¼	63⅞	65
24	64½	65¾	63¾	63⅞	64¾
25	64¼	64½	63⅝	64	64
26	64⅜	64⅜	63⅞	63⅞	64
27	63⅞	63⅞	62⅞	62⅞	63⅜
29	62⅞	63½	60	60½	61½
31	59	59	54⅞	56⅛	56⅞
Grand Average, ...					69⅞

MAY OFFICIAL QUOTATIONS FOR REFINED.

THIS table gives the daily quotations for refined oil at the principal foreign as well as domestic ports.

April.	N. Y. cts.	Philadelphia. cts.	Baltimore. cts.	Antwerp. fr'c.	Bremen. m'rk.	London. pence.
1 .	7¼	7⅛	7¼	17	6.90	5½
2 .	7¼	7⅜	7¼	17⅛	7.00	5½
3 .	7⅓	7	7½	17	6.90	5½
4 .	7¼	7⅛	7½	17	6.90	5⅛
5 .	7¼	7⅛	7¼	17⅛	6.95	5⅛
6 .	7¼	7⅛	7¼	17⅛	6.95	5⅛
8 .	7¼	7⅛	7¼	17⅛	6.95	5½
9 .	7⅜	7¼	7⅜	17	6.95	5½
10 .	7⅜	7¼	7⅜	17	6.95	5¾
11 .	7⅝	7½	7⅝	17⅜	7.10	5¾
12 .	7⅝	7½	7⅝	17⅝	7.15	5⅞
13 .	7⅝	7½	7⅝	17⅝	7.10	5⅞
15 .	7⅝	7½	7⅝	17½	7.10	5⅞
16 .	7¾	7⅛	7⅝	17⅞	7.15	5¾
17 .	7⅞	7¾	7⅝	17⅞	7.20	5¾
18 .	7⅞	7¾	7¾	18¼	7.20	5⅞
19 .	7⅞	7¾	7¾	18½	7.20	5⅞
20 .	7⅞	7¾	7¾	18¼	7.20	5⅝
22 .	7⅞	7¾	7¾	18¼	7.25	5¾
23 .	7⅞	7¾	7¾	18¼	7.25	5¾
24 .	7⅞	7¾	7¾	18	7.15	5⅝
25 .	7⅞	7¾	7¾	17¾	7.15	5⅝
26 .	7¼	7⅛	7¼	17¾	7.05	5⅝
27 .	7¼	7⅛	7¼	17¾	7.05	5½
29 .	7¼	7⅛	7¼	17¾	7.05	5½
30 .	7¼	7⅛	7¼	17⅛	7.05	5½

THE PETROLEUM AGE.

DEVOTED TO THE

INTERESTS OF THE PETROLEUM TRADE.

PUBLISHED MONTHLY AT

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BY THE AGE PUBLISHING COMPANY.

Subscripton price, ... $5 a year.
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Sent, post-paid, to any part of the world.

W. J. McCULLAGH,
Editor.

PRODUCERS now spell it Mahoopany. Six-forty-six has lost its charms.

BACK numbers of the AGE can always be secured by applying at the office, or by mail, box r633.

READ the article on "The Warren Field" in another place. It will be found worthy of perusal.

NOW is a splendid time to erect works all over the country for the manufacture of gas from petroleum. There's millions in it.

THE chapter on petroleum in the opening page of this book closes the eventful year of 1865, during which Pithole rose and began to decline.

RUSSIA uses more oil by 7000 barrels a day than she produces, and yet there are those who will hoist the black flag of over production in that country.

JAPAN is opening her highways for the admission of the most modern civilization, and large and important channels for the consumption of petroleum are thereby established.

IT is a matter of great surprise to the country that the Standard Oil Co. is compelled to enlarge its refining capacity in order to keep pace with the foreign demand for refined petroleum.

IN 22 years less than 30 wells have been obtained that exceeded 1000 barrels a day—a little over one a year. Is Warren County going to make up for lost time by giving us a dozen or two of her own?

RICHBURG operators who for many months looked down upon Warren territory with a kind of pitying condescension are now feeling as if they had been laughing at poor relations who suddenly became very rich. They didn't expect such a thing.

THE production of the Bradford district continues to decline at a fair rate, and at Richburg, at last, the tide is ebbing. If it were not for this hope the judgment day might as well come now as any future time.

THE colored map of Warren County which appears in this number is a valuable addition to Oil Region literature. It will no doubt be appreciated by the trade. The engravers, Matthews, Northrup & Co., have a faculty of putting lines where they belong.

WE have been enabled, by the aid of Mr. Henry Landsrath, to print in this number some very valuable records of oil wells in Warren County, Pa. What Mr. Landsrath does not know concerning the oil conglomerate of that county is not worth a trip to Warren to ascertain.

"WHERE does the oil go to?" is shown by an article elsewhere giving the destination of large quantities. The world has only just begun to remove the wool off its eyes by which it begins to discover a few of the benefits of petroleum. It will probably double up the consumption in the next decade.

THE "oil situation" is not as encouraging as it might be, nevertheless, it might be worse. While there is a particle of breath in a man there is a possibility that he may rally, however poorly he may feel. The oil business is not dead, it slumbereth. The probable duration of this sleep, however, is what worries some folks.

THE monthly report of oil operations for May shows a slight decline in the volume. Had Allegany producers drilled one-half the number of wells they did drill during the first five months of the year, "646" would not have pounced down upon them like a ghost, as it did. They thought, apparently, that they possessed the last acre of valuable oil land there was in the State. How easily one can be mistaken! They are stopping now in Allegany; but give them a chance, even now, and they'll show you how to punch Warren County. A dozen wells a month should constitute the sum total that should be completed for the next three months.

It is stated that the Standard Oil Co. is engaged constructing pipe lines at Baku, Russia, for the purpose of transporting the crude oil production of that region to market. We would call the attention of the company to the fact that a pipe line is badly needed in Burmah, and there are several practical workmen looking for a job.

A PRODUCER was heard to remark the other day that he would willingly subscribe money for the purpose of procuring the aid of some prominent chemist, or other genius, to solve the problem of utilizing petroleum as fuel. If not this, he was willing that it should be applied to any use whereby the surplus stocks might be reduced. It seems at last that some producers are coming to their senses; 50c. oil is doing it.

OLEAN operators, about a year ago, took it into their heads to erect an oil exchange, and carried the project to a successful conclusion. About four months ago it was completed, and opened for business, but there was no business to transact. A few of the leading producers gathered there occasionally for consultation, but further than that, nothing was done. It was finally agreed by the association to rent out its exchange, and, as a result, Barse & Co. of the Exchange Bank are nicely situated in the elegant hall intended as an arena where Bovines and Bruins should contend for the bigger end of the market pasture.

WILLIAM ROCKEFELLER, James R. Keene, and others, of New-York, have organized an association, with $2,000,000 capital, for the purpose of manufacturing petroleum gas in various cities throughout the country. This seems destined to become a very important branch of the petroleum industry, and it is to be hoped that the new company will urge business. There is a fine opening for it, and the first in, the first served. It is a disgrace to the people of Oildom that coal should be used for this purpose when it is known, beyond a shadow of doubt, that consumers of this article can be supplied much cheaper from petroleum at $1.00 a barrel than from coal at its present price — from $3.00 to $5.00 a ton.

OUR title-page which appeared last month has added new lustre to the PETROLEUM AGE. The elegant engraving, showing, as it does, so many features of Oil Region adornments, was the work of Matthews, Northrup & Co., of Buffalo, and requires no recommendation here. It has been viewed by thousands, and admired by all. The AGE with that number (May) passed the first six months of its existence, and goes *striding* on to the distant future. It is heartily received by the public, and since the last issue, especially, it ranks equal with other trade journals of much longer life. The maps and diagrams of this June issue were also engraved by the firm named, and we have no fears for their reception by the trade.

THE torpedo war in the Allegany field continues to wage. So far the Roberts Company is slightly ahead, having secured preliminary injunctions against certain parties. The producers still manifest a determination to continue the struggle in defense, and are employing eminent counsel to defend them in the forthcoming suits. In addition to the suits for infringement of his patent, Mr. W. B. Roberts has brought suit, and obtained a bill for libel against, P. C. Boyle and others of the *Oil Echo*, because of alleged slanderous articles that appeared in that paper referring to his (Roberts) personal affairs. It looks a little childish, to say the least, for a "great man" like Roberts to trouble his head about such small matters. It certainly does not prove to the public that the charges made are untrue. In such a case silence does much more to thwart the influence of a paper than a libel suit.

POLITICS IN THE OIL REGIONS.

POLITICS in the Oil Regions are liable to boil over during the coming campaign. Notwithstanding, the Oil Regions have had a hard row to hoe in trying to secure legislation. State politicians, these days, would as soon think of neglecting their morning prayer for success, as to fail to pay the regions a visit, and especially the metropolis — Bradford. The principal fight will probably be made on "congressman at large," for which office we are promised a quintette of candidates. These come as follows: Independent Republicans 1, Regular Republicans or Roundheads 1, Democrats 1, Prohibitionists 1, Greenbackers 1, and David Kirk, Esq., who, it is alleged, is seriously contemplating a move in that direction. It is altogether likely that the Greenbackers would cast their mite in the Kirk basket, but his fight would not be on currency reform measures alone. It would assume the anti-monopoly attitude, and Mr. Kirk would doubtless say some things to the public that would be of interest. He is largely engaged in

the Roberts torpedo war—in fact it is said he is the general-in-chief of the forces engaged in that contest—and besides that he has other grievances that, dilated, would cause some stir among the voters of Oildom especially. This would make the contest interesting, but Kirk's candidacy is by no means assured at this writing. Mr. Kirk, however, has aspirations in the direction indicated, and if ever elected he will enter upon his duties free from the chains of rings and bosses. The growing disposition of politicians at this day is to monopolize, just as capitalists are disposed to concentrate or confine their forces in the conduct of commercial matters. The tendency is undoubtedly to evil, yet the power to avert disaster lies with the people in this great country, and they will always be found capable of grasping the situation and fully prepared for any emergency. In the Oil Regions, perhaps, less than any other part of the State, party lines are less evenly drawn, and though but a unit in the calculation, yet it seems that this unit is of great value to the average candidate for office.

THE GERMAN OIL FIELDS.

THE latest news from the Oleheim oil field of Germany is to the effect that the producers are now engaged in trying to devise a plan, whereby their business can be made profitable; as it is, the appliances are unfavorable. The oil yield 33 per cent. of refined, and no process has yet succeeded by which the residuals can be utilized. With this discouraging state of affairs, and the American product daily declining in price, it is not possible for the Germans to produce the article at the present time. Were there facilities for transportation in Russia such as America possesses, about the same results would accrue in that field. The outlook, therefore, for the future of the German petroleum industry is anything but encouraging.

A Frankfort paper, speaking of the field, says: "Near Oelheim the number of drilled wells has tripled during the past year, and about 1,000 men are now engaged in working them. The production of the oil, however, is by no means confined to that locality, and good 'finds' have been made between Brunswick and the Weser, the richer wells being reached only in the deeper Devonian and Silurian strata, 1,500 to 2,000 feet below the surface. Characteristic with the forced outflow of the oil is the salty taste of the water that comes up with it, and is presumed to have leaked through the trias strata. The German Petroleum Drill Company at Oelheim (headquarters in Bremen), has up to date put down some thirty wells, the majority of which are less than 100 meters deep. Of these, however, only eleven are productive, with a capacity of forty barrels per day. Samples taken from the refinery of this company have shown a very good result. The specific weight of this water-clear, strongly-smelling, burning fluid is ·807; combustion is reached at a temperature of 49° C., and illumination produced at a temperature of 53° C. The specific weight of the crude oil, as now generally gained from the upper strata, is about ·900. The *Zeitung* further says that the easy decomposition of the German crude oil when exposed to heat requires great care in its distillation. The large quantity of ammonia and sulphur it contains are its predominant characteristics. Of late quite a number of companies have organized in Germany, Russia and England. Their drilling operations extend over a large territory, the United Continental Oil Company of London employing Canadian experts and American machinery. This company also constructs rail lines from place to place for the convenient transportation of the product. The soil in which oil is often found at a low depth is generally of the clay species, and a depth of from eight to nine meters is easily obtained through it in twelve hours. Taking everything into consideration, it becomes transparent that the German oil industry has a great future, and, with a sufficiency of capital and able management will succeed 'without the introduction of new import duties,' as for some time to come it will not be able to materially influence the market in American petroleum."

EXPORTS.

THE total exports of petroleum and petroleum products from the port of New-York, in gallons, from Jan. 1 to June 3, 1882, as compared with those for the same period in 1881, were as follows:

	1882.	1881.
Crude	13,513,882	13,474,760
Refined	150,081,041	104,215,583
Naphtha	3,513,500	4,009,184
Residuum	1,462,059	1,707,735
Total	158,630,482	123,407,242

KERR & ARTERS, who have seized upon the title-page of the AGE, to speak to the public, have a store in running order at Garfield. The enterprising young men are deserving of the success that has characterized their business since they came to Bradford.

REPORT
OF
OIL OPERATIONS FOR MAY.

WELLS COMPLETED.

TUNA VALLEY.

Lot.	*Operator.*	*Production.*
Clark, Boggs & Curtis		8
Welch, Col. Gardner		10

WEST BRANCH.

Pease, George Pease	8

EAST BRANCH.

Coburn, A. W. Burrows, No. 5	12
E. T. Co., Enterprise Transit Co, No 33	12
Jewett, Quintuple Oil Co., No. 11	10
J. Degolier, " " 13	10
Clapp, J. M. Clapp, No. 38	10
Curtis, American Oil Co., No. 15	12
D. De Golier, Emery Oil Co., No. 12	10
Tibbets, " " 4	10
" " " 6	10
Deiter, " " 17	10
Turner, Blackmar & Bell	8
Gregg, Robert Gregg, No. 3	7
Stellheimer, Jewett & Hazleton, No. 5	10
Wells	16
Production	157
Average	9¾

THE QUINTUPLE TRACT.

Lot 64, B. F. Brinton, No. 2	12
103, Geo. Woodward, No. 2	10
111, Gardner & Healey, No. 6	12
158, E. Strong & Co., No. 3	12
197, A. F. Heald	15
212, Kane City Oil Co.	12
156, Chemung Oil Co.	10
226, George McCullagh	15
232, J. A. Wing & Co., No. 3	15
233, " " 3	12
238, Shearman Bros.	12
256, Berry & Kelly	12
258, Burrows & Co., No. 5	15
271, Eaton & Bundy, No. 4	12
Wells	14
Production	176
Average	12½

KENDALL CREEK.

F. A. Moore, Martin & Gillespie, No. 5	10
" Huff & Ege, No. 8	12
Melvin, P. C. L. & P. Co.	12
Turner, W. D. Janes, No. 3	10
Monroe, E. Simpson	10
Bingham, Trio Oil Co.	12
Shed, John Hill, No. 5	10
Kilbury, Williams & Kilbury	10
Richardson, Peck & Freeman, No. 4	dry
Dolloph, " " 2	4

FOSTER BROOK.

C. B. & H., Lot 25, Treat & Porterfield, No. 6	12
" " 33, Vandergrift & Miller, No. 3	8
" " 34, Steele & Weir, No. 2	6
" Hardwood Oil Co.	12
" Ralph Bros., No. 2	8
" L. W. Eighmey, No. 11	10
" Argue Bros. & Cobb, No. 16	10
" A. J. Coldron, No. 37	12
Borden, Howe Bros., No. 6	10
" Lot 77, Geo. V. Forman, No. 14	15
Bradley, Clinton Foster	8

SUMMIT, MARION & RIXFORD.

Borden, Urquhart, Wallace & Lavens	8
" Shear Bros. & Braunschweiger	10
" C. B. Whitehead	10
Schoonover, Schoonover & Baker	8
Bingham, Waugh & Shakely	10
Berger, Robert Gregg, No. 3	10
Book, pur., Hazelwood Oil Co., No. 40	15
" " No. 41	15
" " No. 42	12

STATE LINE AND OIL VALLEY.

A. O. Co. Fullerton, Angell Oil Co., No. 25	20
" " " No. 26	25
" " " No. 27	20
" Knapps, " No. 31	20
" " " No. 32	20
Borden, Johnson & Co., No. 8	15
" Fertig & Henne, No. 20	15
" " No. 21	15
" Forman & Lawton, No. 10	15
" " No. 13	15
" Smith & Jones, No. 3	10
" " No. 9	20
Charles Duke, Charles Duke	10
Barse, Lot 154, Stettheim, No. 7	12
" Geo. V. Forman	12

INDIAN CREEK.

Hamlin, Forest Oil Co., No. 33	12
H. Loup, Sloan & Downing	10
" Globe Oil Co.	10
Keyes, Indian Creek Oil Co.	10
Loup Creek, Middaugh Bros.	dry

FOUR MILE.

Quartette, Quartette Oil Co., No. 22	15
Van Campen, R. W. Evans	15
Jos Waters, Howard & Baum	12
Shattuck, Howe & Eaton	10
Lippert, Griffin & Howard	10
Chamberlain, Geo. Chamberlain	10
Molthrons, Molthrous Bros.	10

KINZUA.

U. O. Co. pur., Union Oil Co., No. 34	100

SUGAR RUN AND KINZUA VILLAGE.

Richardson, Chapin & Co., No. 3	15
" Wright & DeGolier	10
Jamieson, H. A. Jamieson	15
Campbell, Gilbert & Co.	10
Wells	62
Production	817
Average	13

MISCELLANEOUS.

Prentiss Mills, A. Prentiss	dry
Great Valley, Reservation Oil Co.	dry
Weymouth, Gearing Brothers	dry
Wells	3
Production	0

BIG SHANTY.

Dent Lands, P. C. L. & P. Co., No. 26	15
" " " No. 27	15
" " " No. 28	15
York, Book & Whitney No. 4	10
Sullivan, J. M. Tait, No. 4	10
" Mullen, Mills & Boden	12
" Waugh & Porter, No. 4	12
Bingham, Lot 176, Fertig & Henne. No. 7	10
" 176, " No. 8	12
" 178, Eaton & Cumulative Oil Co. No. 8	12
" 180, Hamlin & Rose. No. 3	15
" 180, " No. 4	12
Moody, Minard Run Oil Co., No. 84	30
" " No. 86	30
" " No. 87	30

COLE CREEK AND BINGHAM.

Bordell, Short Oil Co., No. 8	10
Brown & Kellar, E. Duthill	12
Painter, The Union Oil Co., No. 16	15
G. & Van V. pur., Union Oil Co., No. 15	17
Lot 450, Bayne, Fuller & Co., No. 45	12
406, J. L. McKinney & Co., No. 4	20
488, Johnson & The Union Oil Co., 25b	15
493, " 30b	30
492, " 41b	20
492, " 42b	20
491, " 42b	20
491, Forman & The Union Oil Co., 9	30
491, " 10	25
491, " 11	40
417, " 16	25
Bingham, George V. Forman, No. 21	15
" " No. 3	33
" " No. 4	30
" " No. 6	150
Wells	34
Production	779
Average	23

ALLEGANY FIELD.

SCIO.

Lot 3, Blatchley & Murphy	15

ALMA.

Lot 1, Phillips Brothers	10
2, Hardison & Morse	15
2, J. R. Morse	15
4, Bigley, Chamberlain & Luther, No. 3	15
4, Scott, Elliott & Co., No. 5	20
5, O. P. Taylor & Co	8
17, Gaskell & Workman, No. 3	12
17, Triangle Oil Co. No. 13	15
18, G. M. Barney, No. 7	10
18, Anderson & Otis, No. 8	10
23, " " 24	10
20, Webster & Son, No. 2, est	10
23, Dow & Browning	12
38, Westervelt & Snow, No. 4 est	12
38, " " 5 est	12
39, William Chambers, No. 3	3
39-23, Duke & Norton Oil Co., No. 19	15
39-23, " " 20	8
39-23, " " 17	4
53, Elliot & Torrey	5
68, " "	dry
Lot 94, Weaver Bros. & McCalmont	dry
143, G. H. Bush & Cole, No. 3	5
144, Bunker & Fitzsimmons	15
144, H. P. Boyd, No. 3	10
Wells	26
Production	266
Average	10

WIRT.

Lot 3, Schnitzius	dry
17, Reeder & Co., No. 3	3
17, Option Oil Co., No. 2	10
25, Harry White, No. 3	12
25, Fertig Bros., No. 8	40
25, Hazelwood Oil Co., No. 10	20
25, " " 11	25
25, " " 23	30
25, L. S. Whitney, No. 4	25
33, Wirt Oil Co., No. 6	25
33, Wellman, Miner & Fuller, No 1	15
41, Alfred Oil Co	12
41, Finnegan, Wall & Nelson, No. 3	20
41, James Scott	15
41, Wellman, Miner & Pitts, No. 21	20
41, " " " 22	15
41, P. E. Griffin, No. 1	10
41, D. D. Flanigan & Co., No. 4	12
49, A. & H. Painter	25
49, Galligan & Ward	25
57, Lynch & Schneider, No. 4	20
57, Lupher Bros., No. 8	20
57, Coleman & Co., No. 5	12
57, Nile, Davidson & Co	dry
Wells	24
Production	411
Average	17

BOLIVAR.

Lot 6, Pentzer & Love, 3	20
8, S. D. Chase & Co	4
8, A. A. Hopkins, 3	10
15, Rufus Sawyer, est	10
31, Shrieve & Lowry, 4	10
31, " " 5	10
31, Fisher Bros., 4	12
31, Smith & Eichbaum, 2	12
32, Black & George, 11	30
32, Thomas Hackett, 11	30
32, Hazelwood Oil Co., 19	20
32, " " 20	25
32, Brown & Reid, No. 6	25
32, Short & Son, No. 5	50
32, " " No. 6	30
32, " " No. 7	30
32, Manning & Co, No. 2	20
38, Foreman & Ballard Crandall, No. 4	15
38, " " Halbert, 3	24
38, " " 4	25
38, Gearry, Hefferman, Hanley & O'Shea	8
38, Eaton & Elliott, No. 2	25
38, " " No. 3	30
38, Frank J. Clemenger	20
38, Nicholson & Judd, No. 2	30
38, " " 3	25
38, " " 4	30
38, " " 5	20
38, Charles Campbell	10
38, " "	15
38, Franshot & Merrill, No. 5	15
38, " " 6	15
38, " " 7	20
38, " " 9	15
38, Nutting & Springer	15
38, " "	15
38, Whitman, Reep & Co., No. 2	30
38, W. & A. Cochran, No. 3	40
38, " " 5	20
38, " " 6	40
38, Fisher Oil Co., No. 3	35
38, " 4	22
38, " 5	35
38, Heydrick & Co., No. 2	30
38, " " 3	30
38, Kerwin & Alshouse, No. 2	35
38, " " 3	25
38-39, Wiser & Kinkaid, No. 13	40
38-39, " " 14	40
38-39, " " 15	30
38-39, " " 16	25
38-39, " " 17	25
38-39, " " 18	22
38-39, " " 19	25
38-39, " " 20	20
39, Gillespie & O'Donnell, No. 5	30
39, " " 6	35
39, " " 7	40
39, Capt. H. C. Stevens, No. 2	30
39, " " 6	30
39, Smith & Wellman	30
39, " "	25
39, " "	30
39, A. A. Richardson, No. 6	30
39, " " 7	35
39, " " 8	30
39, Jack McVey, No. 1	12
39, C. C. Conroy, No. 2	25
39, Whitney & Good, No. 6	30
39, " " 4	30
39, H. F. O'Neil, No. 4	30
39, C. H. Emerson, No. 5	10
39, " " 7	30
39, H. P. Malone & Co., No. 5	20

Lot 39, H. P. Malone & Co., No. 9 30
39, " 11 25
40, Moore & Thorp, No. 10, est 30
40, " 11, ... 30
40, " 12, ... 30
40, " 13, ... 30
40, " 14, ... 20
40, " 15, ... 30
40, " 16, ... 30
40, W. H. Palmer, No. 3, est 30
40, " 4, ... 40
40, Meldrum Farm Oil Co., No. 14 . . . 30
40, " 15 . . . 20
40, Steele & Booth, No. 6 40
40, " 9 40
40, Anderson & Humphrey, No. 6 . . . 30
40, McCalmont Oil Co., division 9, No. 1 30
40, " " 9, 2 30
40, " " 9, 3 30
40, " " 18, 3 20
40, " " 16, 1 25
40, " " 16, 3 25
40, " " 19, 4 20
46, J. G. Williams & Co., No. 1, est . . 5
46, Wiser Bros. & Forman, No. 1, Thomas 50
46, Bowers & Howell, No. 2 40
46, " 3 40
46, Alshouse, Greenlee & Anderson . . . dry
47, Anderson Bros., Greenlee & Russell, 3 20
47, Anderson Bros., Greenlee & Russell, 4 30
47, Jefferson Varney, No. 12 40
47, " 13 35
47, " 14 5
47, " 15 30
47, " 16 40
47, " 17 100
47, Clarion Oil Co., No. 7 20
47, " 8 50
47, " 9 35
47, " 11 35
47, " 12 65
47, " 17 50
47, William Wallace Oil Co., No. 7 . . . 20
47, " 6 . . . 20
47, " 8 . . . 40
47, " 9 . . . 25
47, A. J. Thompson, No. 2 30
47, " 3 25
47, " 9 15
47, " B 20
47, " E 25
47, " F 30
47, " I 45
47, " J 50
47, Hefferman & Hanley, No. 14 22
47, " 19 15
47, Knox & Canfield, No. 3 15
47, " 4 12
47, " 5 20
47, " 6 20
47, Brawley Bros 12
48, Wallace, Mattson & Thompson . . . 25
48, McCalmont Oil Co., No. 5 35
48, " 7 25
48, A. W. Nelson & Co., No. 3 20
48, " 5 20
48, Bronson, Kiley & Co., No. 7 30
48, Steele, Plummer & Co., No. 4 . . . 40
48, Richardson Oil Co., No. 7 35
48, " 8 30
48, Brawley Bros., No. 8 15
48, K. B. Crane 25
52, Eldridge & Co . . . . . dry
55, L. S. Whitney, No. 2 15
55, " 3 20
55, A. J. Thompson, No. 8 30
55, " 9 25
55, McCracken Bros., & Gleason 25
55, Weaver Bros. & Co 15
55, Columbia Oil Co., No. 1 15
55, " 12 15
55, " 13 15
55, " 14 15
55, " 15 15
55, Stock & Keeler, No. 5 est 20
55, " 6 est 20
55, J. C. Lineman & Beck, No. 3 30
55, Stewart & McDonell, est 12
56, Showalter & Co., No. 9 28
56, " 10 30
56, I. L. & W. P. Haldeman, No. 3 . . . 30
56, " 7 . . . 40
56, " 8 . . . 30
56, Hamlin, Rose & Markham, No. 10 . 40
56, McCalmont Oil Co., div. 36, No. 3 . . 40
56, " " 36, 9 . . 30
56, " " 39, 7 . . 65
56, " " 39, 8 . . 60
56, " " 39, 9 . . 50
56, " " 39, 10 . . 50
63, Ramsey & Co 15
63, Columbia Oil Co., No. 3 12
63, " 4 12
63, " 6 15
64, Hoover & Thompson, No. 12 25
64, " 13 23
64, H. J. Morton & Co., No. 16 30
64, " 21 20
64, " 23 30
64, W. A. Hardison & Co., No. 6 15

Wells completed 184
Production 4904
Average 26⅔

CLARKSVILLE.

Lot 9, Capt. Brett & Co., No. 2 15
9, " 3 15
18, R. W. Evans . . . . . dry

GENESEE.

Lot 7, J. G. Haymaker 5
7, Weiser Bros., No. 2 10
7, I. E. Dean, No. 3 12
7, " 4 15
7, Genesee Oil Co., est 10
8, Hayes, Knox & Co., No. 7 20
8, Merrill, Perrin & Co., No. 11 20
8, J. C. Smith & Son 20
8, Reid & Kerwin 8
8, " 12
8, R. H. Boughton & Co., No. 4 20
8, St Joe Oil Co., No. 6 20
14, Reid & Kervin . . . . . dry
16, A. L. Lineman 20
16, Wilson Bros., est 20
16, Taylor, Hill & Smith 20
16, Morrison & Bennett, No. 3 20
16, G. S. Bussell, No. 5 20
16, Carlin Bros. & Golden, No. 4 15
16, A. P. Tanner 20
16, D. W. Canfield, No. 4 20
16, " 5 10
16, Dagget Farm Oil Co., No. 16 . . . 12
16, " 14 . . . 15
21, Wells & Cassidy 10
24, A. J. Gartland 10
24, Book & Rhodes 8
30, Bennie & Wales, No. 3 12

Wells. 31
Production 414
Average 13⅓

DRILLING WELLS.

ALLEGANY FIELD.

SCIO.

Lot.	*Operator.*	*Depth.*
Lot 1,	Wright & Degolier	500
1,	Taylor, Allen & Nobles	1000
2,	Nameless Oil Co., No. 3	200
2,	" 4	rig
2,	Blatchley & Murphy, No. 2	600
2,	" 3	rig
	Davidson & Co	sand
	Frederick, Basch & Co	rig
Near Whitesville,	J. M. Parker	rig
Pixley Hill,	Willets & Root	1000
Wellsville,	Empire Gas Co	drill

Drilling 7
Rigs 4

Total 11

ALMA.

Lot 1, Empire Gas Co 400
1, Phillips Bros . . . . . rig
1, Jackson & Co . . . . . rig
1, Farrell & Judd 400
2, Hardison & Morse, No. 27 1050
2, " . . . . . rig
2, J. R. Morse, No. 3 150
2, " 500
2, " . . . . . rig bldg
4, S. Bigley, Chamberlain & Luther, 4 . rig
4, Scott & Elliott, No. 6 100
4, Bellamy & Taylor, No. 3 750
17, W. T. Lewis & Co., No. 4 . . . . . rig
17, Bellamy & Elliott 1000
17, " 1050
17, " . . . . . rig
17, " . . . . . rig bldg
17, Triangle Oil Co., No. 14 . . . . . rig
17, " 15 . . . . . rig
18, G. M. Barney, No. 1 . . . . . rig
18, Mrs. O. P. Taylor, fishing . . . . . sand
18, " . . . . . rig
18-23, Anderson & Otis, No. 9 . . . rig bldg
18-23, " 10 . . . rig bldg
18-23, " 25 1500
18-23, " 26 . . . . rig
18-23, " 27 . . . . rig
19, McBride & Co . . . . . rig
23, Wheeler & Co., fishing . . . . . drill
24, Whitehill & Co 400
24, " . . . . . rig bldg
38, Dewees & Weaver, shut down, top . sand
38, Westervelt & Snow, No. 6 . . . . . rig
38, " " 7 . . . . . rig
39, John Chambers, shut down . . . rig bldg
39, Duke & Norton Oil Co., No. 25 . . 500
39, " " 26 . . 200
39, " " 2 rigs bldg
23, " " 21 . . 900
23, " " 22 . . 250
23, " " . . 2 rigs
22, " " . . 3 rigs
51, E. Nicholson & Co . . . . . rig
69, E. Baker & Co . . . . . rig
79, " 500
100, Ready & Co . . . . . rig
111, Torrey & Co . . . . . sand
Lot 121, Geary & O'Shea . . . . . 2 rigs
142, H. M. Harkness 500
143, G. H. Bush, No. 4 800
143, Elliott & Outs . . . . . rig
144, Chandler & Grinnell . . . . . rig bldg

Drilling 22
Rigs 35

Total 57

WIRT.

Lot 17, Taylor & Humphrey, No. 5 750
17, " 6 . . . . rig
17, " 7 . . . . rig
17, " 8 . . . . rig
25, Hazelwood Oil Co., No. 18 100
25, " 19 . . . . . rig
25, " 20 . . . . . rig
25, " 24 800
25, " 25 . . . . rig bldg
25, L. S. Whitney . . . . . rig
25, Fertig Bros., No. 9 1450
25, Fertig & Co . . . . . rig
33, Taylor & Allen, No. 10 . . . . . rig
33, " 11 900
33, " 12 700
33, " 13 . . . . . rig bldg
33, Wirt Oil Co. No. 5 . . . . . rig
33, Wellman, Miner & Fuller, No. 2 . . 300
33, " 3 . . rig
33, " 4 . . rig
33, Knox Bros., No. 4 . . . . . rig
34, O. P. Taylor & Co 1000
41, Mrs. Griffin . . . . . rig
41, D. D. Flannigan, No. 5 . . . . . rig bldg
41, Finnegan, Wall & Nelson, No. 4 . . rig
41, Wellman, Miner & Pitts, No. 23 . . sand
41, " 24 . . 700
41, Mattock & Taylor, No. 25 . . . . . rig
41, Crandall 500
49, A. & H. Painter, Richardson farm, 4 rig
49, A. & H. Painter, Daniels farm, No. 3 sand
49, A. A. Richardson, No. 2 600
49, " 3 . . . . . rig
57, Lupher Bros., No. 9 150
57, " 11 . . . . . rig
57, Kerwin & Reid, No. 4 600

Drilling 15
Rigs 21

Total 36

BOLIVAR.

Lot 2, Scott & Elliott . . . . . sand
5, R. J. Walker 600
5, Star Oil Co . . . . . rig bldg
6, Pentzer & Love 100
6, " . . . . . rig
6, Star Oil Co., No. 5 . . . . . rig
6, " 9 300
6, Mackin Bros 300
6, Wesley Chambers 150
6, Warner & Collins, No. 2 . . . . . rig
6, Reeder & McCoy . . . . . rig bldg
8, Carroll Bros. . . . . rig
8, A. A. Hopkins, No. 4 100
16, Empire Gas Co . . . . . rig
16, Peck & Freeman . . . . . 2 rigs
16, Wiser & Kinkaid . . . . . drill
23, Johnson & Conroy . . . . . rig
23, Geo. K. Anderson . . . . . rig
24, Empire Gas Co . . . . . rig
24, Nicholson, Chester & Co . . . . . rig
31, Shreeve & Lowry, No. 6 . . . . . rig
31, Smith & Eichbaum, No. 3 . . . . . rig
32, Chauncey Oil Co., No. 12 . . . . rig bldg
32, Wm. Sawyer, No. 6 . . . . . drill
32, " 7 . . . . . rig
32, Short & Son, No. 8 200
32, " 9 . . . . . rig
32, " 10 . . . . . rig
32, Manning & Co., No. 3 400
32, " 4 . . . . . rig
32, " 5 . . . . . rig
36, Flynn & Co 500
37, J. Kemp Bartlett . . . . . rig bldg
37, J. B. Plummer 100
37, Baum & Son 280
37, Briody, Parker & Duke 900
38, W. & A. Cochran 900
38, " 800
38, " 700
38, " . . . . . 2 rigs
38, " 50
38, Fisher Oil Co., No. 6 700
38, " 7 . . . . . rig
38, " 8 . . . . . rig bldg
38, " (No. 2 lease) . . . 150
38, Kervin & Alshouse, No. 4 . . . . . rig
38, Chas. Campbell 100
38, Glass & Metcalf, No. 1 . . . . . sand
38, " 2 100
38, J. G. Haymaker 300
38, Curtis & Williams, No. 2 950
38, " 3 . . . . . rig
38, Forman & Ballard, Crandall farm, No. 5 . . . . . sand
38, Forman & Ballard, Crandall farm, No. 9 . . . . . rig
38, Forman & Ballard, Eaton farm, No. 2 rig 800

Lot 38, Frank J. Clemenger, No. 2 250
38, " 3 . . . . rig bldg
38, Nicholson & Judd, No. 6 . . . . . rig
38, Geary, Hefferman, Hanley & O'Shea. rig
38, A. Lemex & Co., No. 1 200
38, " 2 . . . . . rig
38-39, Weiser & Kinkaid, No. 21 . . . . sand
38-39, " 22 506
38-39, " 23 400
38-39, " 24 400
38-39, " 25 300
38-39, " 26 . . . . drill
38-39, " 27 . . . . rig
38-39, " 28 . . . . rig
38-39, " 29 . . . . rig
38-39, " 30 . . . . rig
39, Jack McVey, No. 2 . . . . . rig
39, C. C. Conroy, No. 3 . . . . . sand
39, H. F. O'Neil, No. 5, fishing 800
39, " 9 . . . . . rig
39, " 12 900
39, H. P. Malone & Co., No. 10 200
39, " 12 . . . . sand
39, Capt. H. C. Stevens, No. 3 . . . . . rig
39, " 4 . . . . . rig
39, " 5 100
39, Smith & Wellman . . . . . 2 drilling
39, " . . . . . 3 rigs
39, " . . . . . 2 rigs bldg
39, A. A. Richardson, No. 9 500
39, " 10 . . . . . rig
39, " 11 . . . . . 2 rigs
40, Steele & Booth, No. 5 . . . . . sand
40, " 10 200
40, " 11 . . . . . rig
40, Anderson & Humphrey, No. 7 . . rig bldg
40, Smith & Zeigler, No. 12 300
40, " 13 200
40, " 14 . . . . . rig
40, " 15 . . . . . rig
40, " 16 . . . . . rig
40, " 17 . . . . . rig bldg
40, Meldrum Farm Oil Co., No. 16 . . . . rig
40, " 17 . . . . rig
40, " 18 . . rig bldg
40, McCalmont Oil Co., Division 15, No. 1. 150
40, " " 16, " 2. 260
40, " " 18 650
46, J. G. Williams & Reed . . . . . rig
46, Clark & Davis, No. 1 . . . . . sand
46, " 2 400
46, Palmer & Thynge, No. 1 1000
46, " 2 600
46, Weiser Bros. & Forman, No. 2 . . . 150
46, " 3 . rig bldg
46, " 4 . rig bldg
46, Bowers & Howell, No. 4 200
46, Polar Oil Co 550
46, McClead Bros., No. 1 . . . . . rig bldg
47, Knox & Canfield, No. 7 200
47, " 8 . . . . . rig
47, " 9 . . . . . rig bldg
47, " 10 . . . . . rig bldg
47, Anderson Bros., Greenlee & Russell, No. 5 350
47, Anderson Bros., Greenlee & Russell, No. 6 . . . . . rig
47, Jefferson Varney, No. 18 500
47, " 19 . . . . . rig
47, " 20 . . . . . rig
47, Clarion Oil Co., 18 500
47, " 19 150
47, " 20 700
47, " 21 100
47, A. J. Thompson, 6 . . . . . rig
47, " 7 . . . . rig bldg
47, " 8 . . . . . rig
47, " 10, fishing . . 280
47, " 11 200
47, " 12 250
47, " 13 . . . . rig bldg
47, " 17 . . . . . sand
47, " H 200
47, " . . . . rig bldg
47, Hefferman & Hanley, No. 5 . . . . rig
47, " 15 750
47, " 16 700
47, " 17 . . rig bldg
47, " 18 400
48, Wallace, Matson & Thompson, No. 6. 600
48, D. D. Moriaty, No. 6 1000
48, McCalmont Oil Co., div. 42, No. 2 . . 100
48, " 3 . . 350
48, " 6 . . 200
48, A. W. Nelson & Co , No. 4 600
48, Steele, Plummer & Co., No. 5, fishing. 300
48, " 6 . . . . rig
50, Workman, Gaskell & Scoville . . . . rig
52, Fisher & Hackett . . . . . rig bldg
54, A. L. Kern, & Kittenger & Patterson, rig
54, Wiser & Kinkaid 600
55, L. S. Whitney . . . . . 2 drilling
55, " . . . . . 2 rigs
Bolivar, Whitney & Good, No. 1 . rig bldg
" " 2 . . 100
" " 3 . rig bldg
55, Stock & Keller, No 7 800
55, " 8 . . . . . rig bldg
55, Morton & Kinkaid, 2 . . . . . sand
55, " 3 . . . . . rig
55, Rowley Bros., 2 500
56, I. L. & W. P. Haldeman, No. 5 . . . 200
60, Briody & Co. . . . . rig

Lot 62, Book & Rhodes . . . . . rig
63, H. F. Northrop & Co. . . . . sand
63, Columbia Oil Co., No. 1 . . . rig bldg
63, " 5 . . . . . sand
64, Huver & Thompson, 14 . . . . . sand
64, " 15 . . . . . rig
64, " 16 . . . . . rig
64, " 17 . . . rig bldg
64, H. J. Morton & Co., 22 . . . . . rig
64, " 24 . . . . . rig
64, " 25 800
Scattering, various parties, ... 5 rigs
" " . . . 6 drilling

Drilling 99
Rigs 99

Total 198

CLARKSVILLE.

Lot 1, Knox Bros. . . . . 2 rigs
3, United Pipe Lines. . . . . rig
9, Humphrey, Pierce & Co. . . . . rig
9, Empire Gas Co. . . . . rig
9, Captain Brett & Co., No. 4 . . . . rig
9, " 5 . . . rig bldg
9, Blystone & Co 1000
9, H. H. Argue & Co. 700
9, H. C. Werthman, No. 2 . . . . . drill
10, Smith & Gleason 750
17, Heuston & McKelvey. . . . . rig
17, Ege Oil Co. 900
17, Cranston & Willets . . . . . rig
17, N. C. Clark . . . . . sand
18, Willets & Cranston . . . . . rig bldg
18, Barton, Warner & Hammond 1000
19, Pratt, Fink & Anderson. . . . . rig

Drilling 7
Rigs 11

Total 18

GENESEE.

Lot 7, Weiser Bros., No. 3 400
7, I. E. Dean, No. 5 750
7, " 6 . . . . . rig
7, " 7 . . . . . rig
7, Gray & Harris 150
7, Thomas Kervin, No. 1 590
7, " 2 150
7, McCalmont Oil Co, No. 2 400
7, " 6 200
7, " 7 150
7, " 9 350
7, " 10 300
7, " 11 . . . . . rig
7, " 12 . . . . . rig
8, Merrill, Perrin & Co 600
8, J. C. Smith & Son, No. 11 400
8, Willetts, No. 22 (shut down) . . . . sand
8, " 23 (shut down) . . . . sand
8, " . . . 5 rigs
16, R. H. Boughton, No. 5 600
8, St. Joe Oil Co., No. 1 400
8, " 4 . . . . . rig bldg
12 Kneeland & Gable. 600
14, Huber & Co. 200
16, Taylor, Hill & Smith . . . . . rig
16, Morrison & Bennett . . . . . rig
16, G. S. Bussell . . . . . rig
16, Caelin Bros. & Golden . . . . . rig
16, A. P. Tanner. 300
16, Vandergrift & Miller, No. 5. . . . . sand
16, D. W. Canfield, No. 6. . . . . rig
16, Daggett Farm Oil Co., No. 5 . . . 1000
16, " 15 . . . 900
16, " 16 . . . 850
16, " 17 . . . 200
16, " 18 . . . rig
21, Love & Co. . . . . rig
21, Willetts & Cranston . . . . . rig
23, W. D. Dodge . . . . . rig
24, R. R. Armor, No. 2 700
24, St. Clair & Yocum 500
24, Willets & Cranston, shut down. . . . sand
24, Parks, Hammond & Co. . . . . rig
24, Wheeler & Gailey. 500
29, Willets & Cranston . . . . . rig
39, Bennie & Wales. . . . . drill

Drilling 29
Rigs 21

Total 50

BRADFORD DISTRICT.

TUNA VALLEY.

Scott, pur., Abbott & McGinnis, No. 3. . . . rig
" Hillman & Beattie. 450
Fisher & Lane, Bannon & Kleckner 350
Leonard, D. S. Allen . . . . . rig
McClure, McClure & Co. . . . . rig
Zeliph, J. M. Tait . . . . . sand

EAST BRANCH.

Coburn, A. Burrows, No. 6 . . . . . rig
E. T. Co., Enterprise Transit Co., No. 34 . 1450
" " No. 35 . rig

Hawkins, P. C. L. & P. Co., & P. T. Kennedy, No. 11 . . . . . rig
Jewett, Quintuple Oil Co., No. 12 . . . . . rig
Salem, " No. 11. . . . . sand
" " No. 12 . . . . . rig
J. Degolier, " No. 14 600
Smith, P. T. Kennedy, No. 8 900
Clapp, J. M. Clapp, No. 43 . . . . . rig
Drake, Drake & Fuller, No. 10 1100
Shady, Watson & Fulton, No. 4. . . . . rig
D. Degolier, Emery Oil Co., No. 13 200
Tibbits, " No. 5 350
" " No. 7 900
" " No. 8 . . . . . rig
Deitter, " No. 18. . . . . sand
" " No. 19 350
" " No. 20 . . . . . rig
" " No. 21 . . . . . rig
Morris " No. 37. . . . . sand
" " No. 38 . . . . . rig
" " No. 39 . . . . . rig
" " No. 40 . . . . . rig
" " . . . . . 3 rigs
Newell, J. S. Book & Co., No. 15 . . . . . rig
Wright, Keatley Bros. . . . . rig
B. I. Taylor, Bovaird & Seyfang . . . . . rig
A. Watrous, Gilbert, Shipman & Co. 450
Ingoldsby Albert Degolier. 700
A. Brown, Joseph Morris, No. 2 700
Lewis Run tract, C. S. Whitney & Son, shut down. 1200
Lewis Run tract, C. S. Whitney & Son, shut down . . . . . rig

WEST BRANCH.

Chattel, Lewis & Co. 100
Emery, O. G. Emery 750
King, W. C. Koonce 850
Pease, George Pease . . . . . rig
George, A. F. Heald 200
Crooker, Jennings. . . . . rig bldg
Charles lands, Nemo Oil Co., No. 2 . . . . sand
Stinson, J. G. Williams . . . . . rig
Cranmer, Chapin & Co . . . . . rig
Mack, Chapin & Co., No. 7. . . . . rig
Blair, Carter & Boden, No. 20 . . . . . rig
" " No. 21 . . . . . rig

Drilling 23
Rigs 30

Total 53

THE QUINTUPLE TRACT.

Lot 14, J. S. Wilson, No. 3 . . . . . sand
25, " No. 2 . . . . . rig
111, Gardner & Healy, No. 7 400
253, E. Strong & Co., No. 50 . . . . . sand
156, Chemung Oil Co. No. 9. 200
166, E. Strong & Co., No. 49 1000
167, " No. 46 . . . . . sand
175, D. Atwater & Co. . . . . rig
176, H. A. Booth & Brother . . . . . rig
203, Butler & Martin, No. 3. . . . . sand
203, " No. 4 . . . . . rig
208, Petroleum Centre Oil Co 800
225, Berry & Kelly, No. 2. 100
242, Asher Brown, No. 3 1000
260, Conover, Kelley & Co . . . . . rig
271, ——— . . . . . rig

Drilling 10
Rigs 6

Total. 16

KENDALL CREEK.

Monroe, E. Simpson . . . . . rig
Bingham, Mina Oil Co. . . . . sand
" " . . . . . rig bldg
Richardson, Peck & Freeman, No. 5 250
Hodge, J. J. Carter, No. 22. 1100
Crafts, Hyde & Dunn. . . . . rig
Storms, Wright & Co. . . . . rig
Davis, E. Crawford. . . . . rig
" H. J. Hammond, No. 4 700
Chamberlain, Parker & Howe. 500
Richardson, Mulqueen & Gahen 450
" James Smith 250
Buchanan, Anchor Petroleum Co., No. 16. . 100

FOSTER BROOK.

C. B. & H. Lot 25, Treat & Porterfield . . . rig
" 31, " . . . rig
" Hugus & Young, No. 4 . . . . rig
" Lot 33, Steele & Weis, No. 3 . . . rig
" L. W. Eighmey, No. 12 12
" Argue Bros. & Cobb, No. 18. . . rig
" Burns & Monroe . . . . . rig
" Porter & Gillmor, No. 13 . . . 850
" " No. 14 . . . . rig
" A. J. Coldren . . . . . rig
" Lot 25, Seiple Bros. & Co., No. 5 800
B. & R., Baum & Richardson. . . . . rig
Childs, O. A. Childs & Co . . . . . sand
" " . . . . . rig bldg
Ent. T. Co., F. W. Mitchell, No. 3 150
Borden, Lot 77, George V. Forman, No. 15 . rig
Lynch, Lynch & McMurray. . . . . rig
Willets, O. Smith Oil Co., No. 8 . . . . . rig
" Willets & Young, No. 18 . . . . . sand
" " . . . . . 2 rigs
" I. Willets, No. 21 . . . . . rig
" " 22 . . . . . rig

SUMMIT, MARION AND RIXFORD.

Mather, C. B. Whitehead, No. 2 1650
Irons, Duke Centre Gas Co . . . . . rig
Dodge, Daniel Clark . . . . . rig
Borden, Urquhart, Wallace & Lavens, No. 4 . rig
" Shear Bros. & Braunschweiger, 13 . 1400
Berger, P. T. Kennedy . . . . . rig
P. & L., Robert Greeg, No. 6 . . . . . rig
Book pur., Hazelwood Oil Co., No. 43 . . . 1000
" " 44 . . . rig
" " 45 . . . rig

Drilling 16
Rigs 30

Total. 46

STATE LINE AND OIL VALLEY.

A. O. Co., Fullerton, Angell Oil Co., No. 28 . 450
" " " 29 . 450
" " " 4 rigs
" Knapp's Creek, " 33 sand
" " " 34 . 650
" " " 4 rigs
" James Smith. . . . . rig
Borden, Johnson & Co., No. 9 700
" Fertig & Henne, 23 400
" " 24 150
" Forman & Lawton, 14 200
" " 15 . . . . . rig
Hamlin, J. B. Daniels & Co., 17 1100
Duke, C. H. Coffin & Co., 24 . . . . . rig
Weir & Co., Weir & Co. 100
Angell, Johnson & Co. 500

INDIAN CREEK.

Shattuck, Eaton & Howe 650
Gale, Moore & Watson, No. 5 . . . . . rig
Dodge, Frank Hardwicke . . . . . rig
Pine Lot, Evans Brothers . . . . . rig
E. Loup, Hart & Hicks, No. 21 1500
" " 22 . . . . . rig
" James O'Neil, 10 . . . . . rig
" " 11 . . . . . rig
" J. D. Downing & Co. . . . . 3 rigs
" Follett Brothers . . . . . 4 rigs
Hamlin, Keystone Oil Co., No. 2 550
" " 3 . . . . rig bldg
Barse, George V. Forman . . . . . rig
" Lot 188, J. D. Downing & Co. . . . . rig
Keyes, Indian Creek Oil Co. . . . . rig
Barse, Urquhart & Bussell . . . . . rig
Hamlin, Forest Oil Co., No. 33 1250
" Boyne & Adams 200

MEEK'S CREEK.

Haymaker, Gailey Bros. 700
" " . . . . . rig
Gale, Curtis & Taylor . . . . . rig
" Thompson & Canfield . . . . . rig
" J. L. McKinney & Co. 1200
Hamlin, Mallory Brothers . . . . . rig

FOUR MILE.

Rock City, Quartette Oil Co., No. 22 1100
Lippert, Griffin & Howard, 11 . . . . sand
" " 12 . . rig bldg
Bucher, Wm. Bucher, No. 9 1000
" " 10 . . . . . rig
Harbell, Bell Bros. & Co., No. 12 800
Jos. Waters, Chas. Gillespie. . . . . rig
Baum pur., Waco Oil Co . . . . . 4 rigs
Chamberlain, Henry Chamberlain, No. 3 . . 750
VanCampen, Lot 87, Geo. VanCampen & Sons, rig
Howard, Merril & Perrin, No. 19 . . . . . rig
McCartney, G. W. Funk, 3 . . . . . rig
Donahugh, Brown & Morris . . . . . rig
Stevens, Book & Rhodes, No. 4 . . . . . sand

Drilling 23
Rigs up and building 44

Total. 67

BIG SHANTY.

Dent Lands, Parks, Hazzaad, No. 2 250
" Dent Oil Co., 17 . . . . sand
" P. C. L. & P. Co., 29 600
" " 30 300
" " . . . 2 rigs
" Whitney & Wheeler, No. 12 . . sand
" " 13 . . 1000
" " 14 . . 1100
" " . . 2 rigs
N. W. M. Co., Lot 92, The Union Oil Co., No. 17 500
York, Book & Whitney, No. 6 . . . . . rig
Bingham, Book & Elliott, 3 . . . . . sand
Sullivan, J. M. Tait, 5 1500
" Mullen, Mills & Boden . . . . . rig
" " . . . . . rig
Bingham, John McKeown, No. 4 650
" Lot 151, Geo. V. Forman, No. 8 . . rig
" 176, Fertig & Henne, 9 . . rig
" 180, Hamlin & Rose, 5 . . rig
Moody, Jennings & Forgie, No. 4 . . . . . rig
" Minard Run Oil Co., 88 1250
" " 89 1100
" " 90 450
" " 91 . . . . rig

COLE CREEK AND BINGHAM.

Moore, Geo. V. Forman, shut down 1200
G. & V. pur., The Union Oil Co., No. 15 . . sand
" " " 16 . . 1200
" " " 25 . . rig
" " " 26 . . rig
M. W. & H., 600 acres, W. W. Thompson, 8 rig
" " " 9 rig
Lot 394, P. T. & W. C. Kennedy, No. 8 . . rig
399, The Forest Oil Co., No. 28 . . . . . rig
394, " 29 . . . . . rig
399, " 30 1250
405, " 7 1350
405, " 8 4800
405, " 9 . . . . . rig
405, " 10 . . . . . rig
404, Bennett & Quick, No. 17 . . . . . rig
407, " 18 1300
406, J. L. McKinney & Co., No. 5 . . . 500
409, " 9 . . F 1250
439, " 21 . . . 1500
416, Lee & Apple, No. 4 . . . . . rig
416, " 5 . . . . . rig
416, " 6 . . . . . sand
416, " 7 1250
416, " 9 . . . . . rig
423, Newell & Palmer, No. 4 . . . . . rig
493, Johnson & Co. & U.O.Co., No. 38 b . rig
493, " " 39 b . rig
493, " " 40 b . 800
492, " " 43 b . 700
492, " " 44 b . 450
492, " " 45 b . r bg
491, Forman & Union Oil Co., No. 12 . . 1000
491, " " 13 . . 900
491, " " 14 . . rig
417, " " 17 . . 1650
417, " " 18 . . 600
417, " " 19 . . rig
Bingham, Geo. V. Forman, No. 20, fishing . 1800
Simpson, " 12, . rig
Forman, " 5, . 100

KINZUA.

C. P. & H. pur., Cornwall, Parker & Co., No. 35 1800
C. & H. pur., Carter & Hurd, No. 12. . . . sand
" " 13. . . . rig
" " 14. . . . rig
Bingham, Lot 136, J. M. & T. Tait, No. 6. . rig
" 135, J. M. Tait, 10. . rig
U. O. Co., pur., W. J. Woods 1000
Warrant 2256, Bennett & Mullen, shut down . sand
" 2256, U. A. Andrews . . . . . sand
Taylor, Atlas Oil Co. 100
Bingham, Atlas Oil Co. . . . . rig

SUGAR RUN AND VANSCOY SECTION.

Holmes, Chapin & Co. 150
Corydon, Lot 13, Duke & Harris, shut down . sand
Chapel Fork, Brown & Co . . . . . rig
Jameson, H. A. Jamison . . . . . rig
Vanscoy, Dew Drop Oil Co., No. 5 . . . . . rig
Jameson, unknown . . . . . rig
Lot 13, Harris . . . . . rig bldg

Drilling 43
Rigs 42

Total. 85

MISCELLANEOUS.

Westfield, Tioga Co., Duke Centre Oil Co. . drill
Potter County, Germania Oil Co. . . . . drill
" " . . . . . rig

Drilling 2
Rigs 1

Total. 3

THE WARREN DISTRICT.

CLARENDON.

Lot 55, David Beatty & Son . . . . . rig
78, " No. 19. 500
78, " 20. . . . . rig
78, " 21. . . . . rig
78, John Bryan . . . . . rig
80, Weiser Bros., No. 12 700
80, T. N. Barnsdall, No. 5 . . . . . rig
80, Thos. Murphy, No. 2. 950
80, " No. 3. . . . . rig
80, May & Groves, No. 3. 350
80, D. J. Thayer & Crosby, No. 4 . . . 1200
105, Short, Oyster & Co., No. 4. . . . . sand
105, Shugert & McLouth, No. 2. 650
105, Fisher & Weaver, No. 4 . . . . . rig
106, W. D. Archbold & Co., No. 4 . . . 600
106, D. B. Foster, No. 3. 250
107, Malone & Smith, No. 6. 800
107, H. P. Malone, No. 6 . . . . . rig
108, Eureka Oil Co . . . . . rig
108, Duke & Harris. . . . . rig
108, Grandin & Hague . . . . . rig
109, Little Toby Oil Co. (shut down) . . sand
161, Helm & Mealey Bros., No. 2 . . . . rig
162, Magee & Smith. 250
465, Hertzell & Nesmith 450
466, Riddlesperger Bros., No. 3 . . . . rig
Lot 495, Gilson & Gilbert 200
495, Aiken Bros. . . . . rig
495, E. Katz . . . . . rig
497, F. W. Pratt & Co., No. 3. 200
497, " 4. . . . . rig
497, " 5. . . . rig bldg
498, Wallace . . . . . rig bldg
498, Crowell & Estep . . . . . rig
498, Porter & Topper. . . . . sand
498, New Hope Oil Co., No. 3. 250
498, Geo. Givens, No. 5. 600
498, S. W. Waters & Co., No. 3. 450
498, Hopewell, Payne & Co., No. 3 . . . rig
498, Conway & Gaudy, No. 3. . . . . sand
498, E. N. Smith & Co., No. 4 700
489, I. Conrath, No. 5. . . . . rig
499, Grosh, Hamsher & Husband . . . . sand
527, F. H. Rockwell & Co., No. 4 450
537, " . . drilling
527, " 5. . . . rig
528, Clarendon Oil Co., No. 4 500
528, " 5. 200
528, Spear & Armstrong, No. 10. 800
528, Beaumont & Drake, No. 1 . . . . . sand
528, " 2 . . . rig bldg
529, Zeittle & Co 600
529, C. Wilder . . . . . rig
529, Lake Bros. 800
530, Ralph Bros., No. 2. . . . . sand
530, Waugh & Townsend, No. 3. . . . . rig
530, J. M. Childers & Co 600
531, Young & Co., No. 3 200
531, Leng, Firman & Co. . . . . rig
556, Leopold Bros. . . . . rig
556, Watkin Bros., No. 1, fishing . . . . sand
556, " 2. . . . . rig
557, Bryan, Hopkins & Co., No. 6 . . . . rig
557, " " 7 . . rig bldg

Drilling 34
Rigs 30

Total 64

CHERRY GROVE.

Lot 611, Mehoopany Oil Co. . . . . sand
618, Jamestown Oil Co . . . . . rig
633, Union Oil Co. 650
634, " . . . . . rig
635, J. A. Cadwallader & Co., No. 1 . . . 1600
635, " " 2 . . rig
635, " " 3 . . . rig
635, " " 4 . rig bldg
635, L. A. Brenneman. 350
646, Union Oil Co., Mystery . . . . . sand
646, " " No. 2 . . . rig
646, " " 3 . . . rig
646, " " 4 2 rigs bldg
647, J. A. Cadwallader & Co . . . . . sand
647, " " . . . . . 2 rigs
658, " " . . . . rig bldg
659, " " 600
659, Jamestown Oil Co . . . . . rig
663, Magee & Smith . . . . . rig bldg
671, R. E. Green. . . . . drilling
672, Tim Mullin . . . . . rig bldg
636, Tom Loan . . . . . rig bldg

Drilling 8
Rigs up and building 16

Total 24

THE GLADE DISTRICT.

Asylum lot, H. A. Jamieson. . . . . rig
Watson, Brown Bros., No. 3 . . . . . rig
Hoffman, Otis Hoffman. . . . . sand
Stone, Glade Run Oil Co 450
Myers, John Bell. . . . . sand
Widow Meade, Ralph Bros. . . . . rig
Lemhart, Branch & Smith. 150
Roy, James Roy 200
" " . . . . . rig
King's Run, Marsh & Brown . . . . . rig bldg
" Marshall & Co. . . . . rig bldg

Drilling 5
Rigs 6

Total 11

SHEFFIELD.

Lot 368, Magee & Horton . . . . . rig
396, Horton, Crary & Co., No. 5 . . . . rig
408, Wetmore, Howe & Co., No. 10 . . . 600
408, " 11 . . . 1100
408, " 13 . . . rig
437, " 12 . . . 500
408, Magee & Horton, No. 10 250
408, " 11 1200
438, Emerson, Shank & Co., No. 3 . . . rig
212, Truby & Co . . . . . rig
Williamson, J. L. McKinney & Emery, shut down . . . . . sand
Warrant 2877, H. B. Porter, shut down . . . sand
Cooper, Mainwaring . . . . . drill

Drilling 8
Rigs. 5

Total. 13

THE LOWER COUNTRY.

FOREST COUNTY.

Tract 2730, Reno Oil Co.	rig
" 5502, Unknown, shut down	1000
" 5211, Tionesta Oil Co.	600
Lot 41, Mainwaring & Co.	rig
Cooper, Blue Jay Oil Co	100
Cook, "	rig bldg
Stewart, "	rig
Forest, "	100
Bear Creek, J. Cornwall & Co., fishing	1750
Drilling	5
Rigs	4
Total	9

CLARION.

Call, Butler & Smith	960
J. P. Lynn, R. Nicholson	300
F. J. Payne, Thompson, French & Co.	150

BYROM CENTRE.

D. M. Crawford, D. M. Crawford & Co	800
Sloan, Dodd & Duncan	1000
John Sutton, Thos. Hays	300
H. C. Anderson, Daniels & Dougherty	700
A. B. Grant, Grant Bros., fishing	1300
Pitcher Run tract, E. Crawford & Co.	900
W. S. Thompson, W. S. Thompson	1050
Russell, Major Baum	rig
W. R. Crawford, Unknown	rig
J. E. Miller, Story & Adams	rig
Hopewell Oil Co., Hayward Oil Co.	rig

BUTLER AND ARMSTONG.

Jenkins, Sillcox & Co.	1300
Stewart, Cornplanter Oil Co.	1550
Fleeger, Hyland & Co., fishing	900
Thorn, Griswold & Gibson	500
Black, Harry Parker	200

BALD RIDGE.

Shorts, Bald Ridge Oil Co.	700
Weber, "	500
Mahood, "	400
Gruber, K. H. McBride.	1100
Renfrew, Phillips Bros., No. 11	900
" " 12	500
Gruber, Simcox & Myers, No. 1	450
" " 2	400
Renfrew, "	500
Reibold, Philadelphia Co.	rig
McKee, McConnell & Co.	rig
Shorts, H. W. Walker	rig
" Chas. King	rig
Reiber, B. R. O. Co	rig
Heckert, "	rig
Ketterbough, Simcox & Myers	rig
Crow, Phillips Bros.	rig
Wm. Brown, Union Oil Co	rig
Johnston, K. H. McBride.	rig
Duffy, E. O. Emerson	rig
Weber, A. Sherdemantel	rig
" H. L. Schenck	rig
Freedom, Beaver county, Hoover & Cotton	drill

VENANGO.

McBride, W. Chambers	200
Dougherty, W. J. Hulings	500
Gates, Fisher Bros.	300
Tract 47, Fisher Bros.	100
Cornplanter, J. Ross	200
Drilling	35
Rigs	21
Total	56

SUMMARY.

Wells Completed.

BRADFORD FIELD.

Section.	*No. of Wells.*	*Barrels.*	*Average.*	*Dry.*
Tuna Valley, East Branch, West Branch	16	157	9¾	..
Quintuple Tract	14	176	12½	..
Kendall Creek, Foster Brook, Summit, Marion and Rixford, State Line Oil Valley, Indian Creek, Four Mile, Kinzua	62	817	13	2
Miscellaneous	3	..	..	3
Big Shanty, Cole Creek & Bingham	34	779	23	1
Totals	129	1,927	15	5

ALLEGANY FIELD.

Scio, Alma	26	266	17	2
Bolivar	184	4,904	26⅔	1
Wirt	24	411	17	2
Clarksville, Genesee	31	411	13⅓	2
Totals	265	5,992	22⅝	7

WARREN FIELD.

Cherry Grove (June 1)	2	1,000	...	..
Clarendon & Sheffield	44	516	...	..
Lower Country	17	90	...	..
Totals	63	1,606	...	..
Grand totals	457	9,525	20 5-16	12

Drilling Wells.

ALLEGANY FIELD.

	Drill.	*Rigs.*	*Total.*
Scio	7	4	11
Alma	22	35	57
Wirt	15	21	36
Bolivar	99	99	198
Clarksville	7	11	118
Genesee	29	21	50
Totals	179	191	370

BRADFORD FIELD.

Tuna, East Branch, West Branch	23	30	53
Quintuple	10	6	16
Kendall Creek, Foster Brook, Summit, Marion & Rixford, Oil Valley, Indian Creek	16	30	46
Meek's Creek, Four Mile, Big Shanty, Cole Creek and Bingham, Kinzua	23	44	67
Miscellaneous	43	42	85
	2	1	3
Totals	117	153	270

WARREN FIELD.

Clarendon	34	30	64
Cherry Grove	8	16	24
Glade	5	6	11
Sheffield	8	5	13
Totals	55	57	112
Lower Country totals	35	21	56
Grand totals	386	422	808

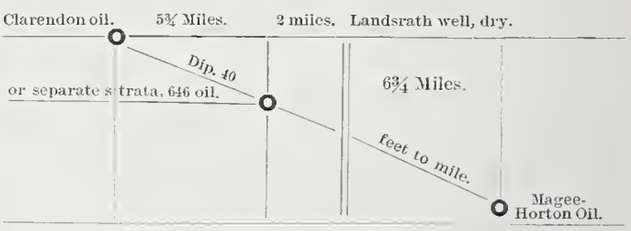
CRUDE OIL MARKET.

MONTHLY AND YEARLY AVERAGE PRICE OF PIPE LINE CERTIFICATES OR CRUDE OIL AT THE WELLS, IN BARRELS OF 42 GALLONS EACH.

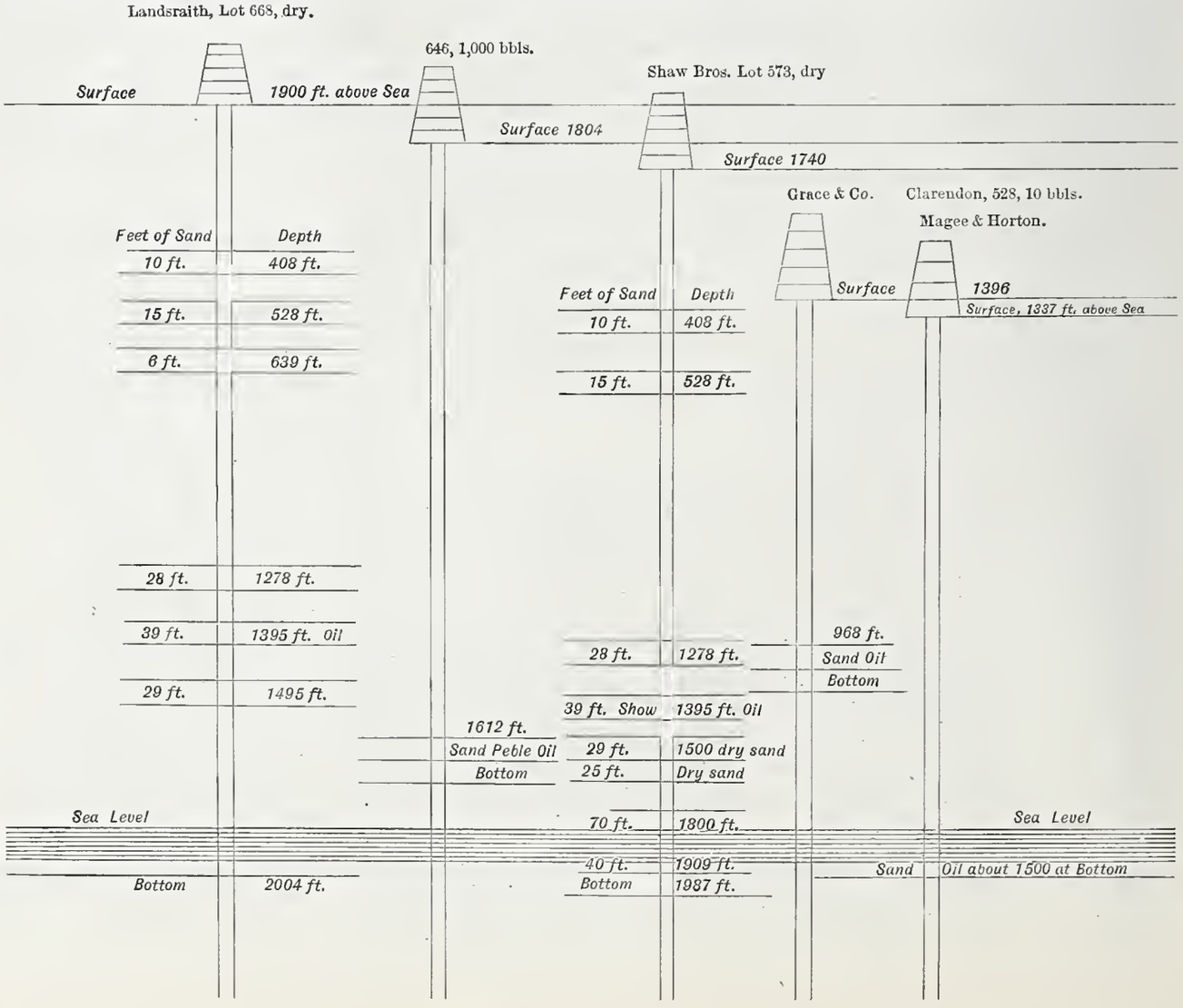
A. D.	Jan. Ave'age	Feb. Ave'age	March Ave'age	April Ave'age	May Ave'age	June Ave'age	July Ave'age	Aug. Ave'age	Sept. Ave'age	Oct. Ave'age	Nov. Ave'age	D'emb'r Ave'age	Yearly Avrges.
1859.	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	20.00	20.00	20.00	20.00	20.
1860.	19.25	18.00	12.62½	11.00	10.00	9.50	8.62½	7.50	6.62½	5.50	3.75	2.75	9.
1861.	1.00	1.00	1.00	.62½	.50	.50	.50	.25	.20	.10	.10	.10	.
1862.	.10	.15	.22½	.50	.85	1.00	1.25	1.25	1.25	1.75	2.00	2.25	1.
1863.	2.25	2.50	2.62½	2.87½	2.87½	3.00	3.25	3.37½	3.50	3.75	3.85	3.95	3.
1864.	4.00	4.37½	5.50	6.56	6.87½	9.50	12.12½	10.12½	8.87½	7.75	10.00	11.00	9.15½
1865.	8.25	7.50	6.00	6.00	7.37½	5.62½	5.12½	4.62½	6.75	8.12½	7.25	6.50	6.87
1866.	4.50	4.40	3.75	3.95	4.50	3.87½	3.00	3.75	4.50	3.39	3.10	2.12½	3.59
1867.	1.87½	1.85	1.75	2.07½	2.35	1.90	2.62½	3.15	3.40	3.55	2.50	1.87½	2.74
1868.	1.95	2.00	2.55	2.82	3.75	4.50	5.12½	4.57½	4.00	4.12½	3.75	4.35	3.41½
1869.	5.75	6.95	6.00	5.70½	5.35	4.95	5.37½	5.57½	5.50	5.50	5.80	5.12½	5.63¾
1870.	4.52½	4.52½	4.45	4.22½	4.40	4.17½	3.77½	3.15	3.25	3.27½	3.22½	3.40	3.89
1871.	3.82½	4.38	4.25	4.01	4.60	3.85½	4.79	4.66	4.65	4.82½	4.25	4.00	4.34
1872.	4.92½	3.80	3.72½	3.52½	3.80	3.85	3.80	3.58½	3.25	3.15	3.83½	3.32½	3.64
1873.	2.60	2.20	2.12½	2.30	2.47½	2.22½	2.00	1.42½	1.15	1.20	1.25	1.00	1.83
1874.	1.20	1.40	1.60	1.90	1.62½	1.32½	1.02½	.95	.95	.85	.55	.61½	1.17
1875.	1.03	1.52½	1.75	1.36½	1.40	1.26½	1.09	1.13	1.33	1.32½	1.44	1.55	1.35
1876.	1.80	2.00	2.01	2.02¼	1.90½	2.01¾	2.24½	2.71	3.81	3.37½	3.11	3.73	2.56¼
1877.	3.53¼	2.70	2.67½	2.58	2.24	1.94⅝	2.07½	2.51	2.38	2.56¾	1.91	1.80	2.42
1878.	1.43	1.65¼	1.59	1.37½	1.35¼	1.14	.98¾	1.01⅜	.86½	.82½	.89⅜	1.16	1.19
1879.	1.03	.98	.86¼	.78½	.76	.68⅜	.69⅞	.67⅛	.69½	.88½	1.05⅝	1.18⅛	.85⅞
1880.	1.10¼	1.03⅛	.88¼	.78	.80	1.00	1.06¼	.91	.96	.96⅞	.91⅞	.91⅝	.94½
1881.	.95½	.90⅜	.83⅜	.86¾	.81⅞	.81¼	.76⅞	.78⅝	93.3–16	.94¾	.83	.84	.85¾
1882.	.83¼	.85¾	.80⅞	.78½	.69⅞	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .

THE WARREN FIELD.

THE elegant map which will be found on the last page of this issue will aid largely in forming a correct idea of the extent of developments in the Warren County field, which is just now commanding the undivided attention of the entire oil trade. The late strikes on lots 646, 611, 619 and 635 are of so much importance, that we have determined upon exhibiting to the trade as much of the true inwardness of the field as it is possible to reach at this time. In order, therefore, to more fully understand the relations that the various sections in which oil is now producing bear to one another, we append below diagrams representing a well in each section, showing the surface elevation, together with tide level, and depth of sand and oil deposits. From these it will be gathered easily that the oil at "646" is either found in a lower stratum of sand from that of Clarendon, or else there is a southern dip of the rock of 40 feet to the mile. This, of course, is a much greater dip than the oil rock was ever known to make in any other locality, and, of course, it will require more proof than we have at hand to fully substantiate the theory. It is much easier to believe that the formations are separate and distinct, having no relation whatever with one another, than to believe in a common descent of 40 feet per mile. The course from the Shaw Well on lot 573 to the MaGee & Horton section is southeast, and from Clarendon it is almost directly south. The 40 feet to the mile dip, however, brings the line of descent from Clarendon to "646" and MaGee-Horton perfect. The wells would stand on the line something like this:



The difficulty in this is seen in the fact that Landsrath, at the proper level, found neither sand, oil or gas, so that it is altogether likely the strata as indicated are separate. The following diagram will more fully illustrate the relative position of each well and the oil-producing strata in which each found its supply:



Make two squares on the border of the map, opposite lot 575, and mark the outside one as Shaw and Green, lot 573, drilled in 1877.

A summary of the whole may be made up in this way:

No. of lot.	Tide level.	Depth to oil rock.	Surface above tide.	Wells drilled below tide.	Total depth of well.	Remarks.
573	1740	1395	345	247	1987	Show of oil and gas.
646	1804	1612	192	. . . .	1620	1000 bbls.
668	1900	1625	275	104	2004	Gas—no oil.
408 Horton	1337	1400	. . . .	63	1440	Fair well.
528	1396	965	431	. . . .	965	Fair well.
619	1812	1620	192	. . . .	1620	1400 bbls.

In wells 668, 646, 619, and 611, gas was found between 450 and 600 feet of surface.

POSITION OF OIL ROCK AND TIDE WATER.

Lot.	Above tide.	Lot.	Above tide.	Lot.	Below tide.
528	431	573	345	408	63
646	192	. . . .	. . . .	. . . .	. . . .

The gentleman to whom is due the credit of the wonderful development of Cherry Grove is Mr. Henry Landsrath, of Oil City, and passive resident of Warren, Pa. A few years ago Mr. Landsrath, after a careful study of the situation in the northern field, and a comparison of sand levels and characteristics as he obtained them from actual drillings in each section, concluded that in the portion of Warren County now crazing the oil trade there should exist a large body of oil.

Maps of each county and each oil deposit were accurately made by him, and a line from the main deposit of Bradford to that of Clarion was drawn over it. By actual tests in the vicinity of Balltown, Sheffield and Kane, as well as other points in Forest County, he became perfectly well satisfied that though sand rock of greater or less dimensions was found along nearly the whole length of this line, yet his observations farther west were of such a nature as to incline him to the belief that he must "go west" of the regular belt. What he had discovered on the main line were evidences only of the existence somewhere in the latitude of regular oil formations. Records of wells along the Alleghany River and Tidioute, together with correct data gathered at Clarendon, and the Shaw & Green Well on lot 573, near the headwaters of the west branch of Tionesta Creek, led Mr. Landsrath to locate a well on lot 668, Cherry Grove. This well was completed in 1879 and its record is shown by the above engraving. If science ever had anything to do in developing an oil field, it certainly had in this case. Of course, Mr. Landsrath got a dry hole on "668," but concluded that he should be still farther west. Finding that his credit might be impaired by another test, and that the time of his leases would shortly expire, he concluded to dispose of them at what he could realize rather than let them die on his hands. This was accordingly done, and Messrs. Falconer and Fred. Morck, of Warren, became the purchasers. These parties sub-leased to the Jamestown Oil Co., Dimick & Grace, who proceeded with the second test of the region. When asked by Mr. Dimick on what portion of the leases he would locate the next well, Mr. Landsrath replied, "On the northwest corner of '646.'" This was done, with the result hereinafter described. Mr. Landsrath retained a small interest in the leases till after the well "646" was completed and, through a misrepresentation of the parties to whom he finally sold all, regarding the depth of the well, he was prevailed upon to part with the last interest in that neighborhood. The misrepresentation, as stated by him, was made in giving the depth of 646, which placed at 1,700 feet, and no sand. This true, he concluded that it must be a failure, and that the pool lay still further to the west. Sand in the well was penetrated at about 612 feet, and it is supposed the tools ran eight feet, making the total depth 1,620 feet, at the present time. It is sometimes considered strange why Mr. L. sought such a great elevation upon which to sink a test well, but he claims that elevated plateaus are by far the most promising of rich deposits, and for this reason he ascended that of Cherry Grove. It was a remarkable instance of successful scientific research into the bowels of the earth for a mineral deposit, and apparently more remarkable that the gentlemen should have stepped down and out, or been forced to, just at the door of a wonderful financial success. In fact, it is to be regretted, for many less worthy win more than they play for. The gentlemen, however, who did succeed — Messrs. Grace & Dimick— are among the most enterprising, as well as daring prospectors, the Oil Country has ever possessed.

THE FIELD AS IT IS.

On the first of the month "646" remained still a mystery so far as its productiveness was concerned, as in fact, so far as the public is concerned, it is to the present day—June 10th. It was unplugged three weeks ago and has been flowing since that time largely. In one day, soon

after opening, it is asserted by the owners, it put in tank 1,150 barrels of oil. Since then it has gradually declined and at the present time is reported as doing between 600 and 700 barrels a day. Having no actual gauge, the AGE gives only reports which come from very good authority.

The opening of this well, of course, caused intense excitement throughout that entire district. There had been so many conflicting reports sent out from the field during the continuance of the mystery that it had come to be quite generally believed throughout the country that the whole business was a scheme conducted on a scale of gigantic proportions for the purpose of depressing the oil market and making large margins by "going short." The parties who had the inside track as to information, invested largely in real estate in the vicinity, and, notwithstanding this fact, many persisted in calling the mystery a fraud. But the opening up of the venture dispelled all doubts and there was a rush of speculators to the scene such as has not been witnessed since the memorable days of Pithole. Capt. Murphy, of Philadelphia, who had been let into the secret of the mystery, purchased lands northeast of the well, on lot 619, about a mile from the mystery, and commenced drilling and in about a week after the opening of the latter gave a new impulse to the section by adding another gusher to its credit. This started at fully 1,200 barrels. This was immediately followed by Book and others on lot 611, another mile northeast, where a well was drilled to the top of the sand and remains in a comatose condition ready to pounce onto the trade when commanded. This was followed by Cadwalader No. 1, on lot 635, 400 feet north of the mystery, which started at 1,500 barrels. These locations are all designated in the color lines of the map.

TRADES.

Trading in lands on the lines marked red has had no parallel, as stated, since 1865. Lot 635, which was owned by Cadwalader, W. H. Johnson and Vandergrift, was divided into 5-acre lots and sold at from $1,000 down to $500 per acre, according to location, and a fourth royalty. Murphy sold to McCalmont Oil Co., 70 acres on 619, at $1,000 per acre fee, and this has been all subleased at $300 per acre, and half the oil royalty. This gives some idea of how speculation has run there. All told, nearly a million dollars have been squandered or deposited in Cherry Grove, since the opening of the mystery, for lands and leases, to say nothing of original purchases. On lots 659, and 672, and 671, at the southwest, wells are now at the interesting point. The one on 659 is at the sand, but has not penetrated it, so that it is impossible to calculate its capacity. The one on 671 should reach the desired spot by the 25th of the month, or a few days later at the farthest. These will have an important bearing upon the situation at the southwest, where there is a region of country nine miles in length and six in width that has never been tested. Landsrath's plateau, however, *expires* about three miles out from 646.

At the northeast, a large gas vein on lot 556 adds fresh evidence that the prolific pool terminates at some point between the latter and lot 611, the Mahoopany Well location. The Grosh mystery may be put down as a failure on 499. So, at this writing, the red lines of the map must be taken as the guide till they are changed by actual developments. It is to be supposed that they will be enlarged on all sides, and as this occurs the lines will be so marked and colored from month to month until the outlines are properly set. This is supposed to be the richest deposit ever discovered. It required twenty-two years to find thirty wells that yielded over 1,000 barrels each per day in the Pennsylvania Region, and Warren alone has opened room for a fair proportion of this amount all to herself. It may be possible, however, that, like Pithole, those wells which are to follow the spouters may not all flow a thousand barrels.

THE REAL ESTATE MARKET.

THE northern field and Allegany have been deserted in a manner by the land speculator and production buyers. The striking of the great pool in Warren County has had a distressing effect upon values in every other section or district. It is estimated that the shrinkage in Allegany and Bradford amounts to 33 per cent. of the entire value, and the bottom has not yet been reached. During the early part of the month there was an apparent disposition to operate, though cautiously, by purchasers in Allegany, as also Bradford, but, during the ten days ending this, Saturday, June 10th, purchasers have almost fled from those entirely. In Allegany during May there were 21 sales of various dimensions, the highest being 84,000 and the lowest 2,500.

Bradford renders about a dozen, aggregating $150,000, while Warren comes up with four dozen, aggregating $500,000. In this latter field the trade has been exceedingly lively during the early part of June, as will be seen by reference to the report of the district found elsewhere.

STATEMENT made by the United Pipe Lines July 10th, 1880, and enlarged to May 31st, 1882. It gives gross stocks, sediment and surplus, net stocks, outstanding balances, receipts (or runs) from all sources, and total deliveries:

	Gross Stocks.	Sediment and Surplus.	Net Stocks.	Outstanding Acceptances.	Credit Balances.	Receipts from all Sources.	Total Deliveries.
1877—April	1,895,153.71	77,386.70	1,817,767.01	449,640.14	1,368,126.87	200,570.81	125,797.90
May	1,762,602.64	75,363 87	1,687,237.77	663,663.71	1,003,574.06	493,200.58	619,612.26
June	1,596,367.68	81,255.42	1,488,112.26	661,786.57	826,325.69	538,906.95	737,609.77
July	1,482,433.51	81,741.50	1,400,692.01	667,166.36	733,625.65	615,145.46	699,476.18
August	1,489,052.53	81,144.63	1,407,907.90	643,281.46	764,626.44	673,403.04	666,144.28
September	1,339,032.27	67,163.68	1,271,868.59	552,676.26	719,192.33	625,225.37	769,745.57
October	1,434,728.78	46,771.99	1,387,956.79	673,850.05	714,106.74	687,094.59	570,092.71
November	1,691,399.52	39,418.00	1,651,981.52	657,591.36	994,390.16	913,644.19	649,242.70
December	2,830,413.36	68,729.63	2,761,685.73	754,338.25	2,007,347.48	1,656,150.37	506,332.99
1878—January	3,124,641.15	72,453.43	3,052,187.72	864,711.41	2,187,476.31	872,681.18	715,149.78
February	3,439,526.98	82,452.66	3,357,074.32	1,404,292.13	1,952,782.19	1,030,688.44	720,478.14
March	3,940,000.65	92,963.06	3,847,037.59	1,487,430.50	2,359,598.09	1,196,251.26	701,681.27
April	4,335,274.84	133,935.76	4,201,340.08	1,615,791.19	2,585,548.89	1,137,359.40	778,050.53
May	4,609,681.45	150,117.76	4,459,563.69	2,065,333.31	2,394,230.38	1,104,352.40	843,081.33
June	4,719,699.25	181,800.03	4,537,899.22	1,950,420.81	2,587,478.41	1,092,604.02	1,004,474.55
July	4,885,851.72	229,080.78	4,656,770.94	2,078,466.56	2,578,301.38	1,258,648.45	1,108,074.33
August	4,571,658.59	217,085.19	4,354,573.40	2,064,590.75	2,289,982.64	1,195,268.67	1,496,009.04
September	4,410,061.84	225,088.86	4,184,972.88	2,705,853.95	2,479,119.03	1,182,118.57	1,318,265.33
October	4,072,267.43	234,050.89	3,838,576.54	1,517,484.27	2,321,092 27	1,271,174.73	1,564,984.43
November	4,083,972.42	216,655.30	3,867,317.12	1,784,443.35	2,082,873.77	1,159,623.71	1,129,047.42
December	4,098,200.92	201,470.30	3,896,730.62	1,741,311.07	2,155,419.55	972,338.83	924,035.93
1879—January	4,759,031.41	182,707.80	4,576,323.61	2,153,763.83	2,422,559.78	1,231,237.19	546,271.74
February	5,157,646.15	171,689.80	4,985,956.35	2,346,238.22	2,639,718.13	1,055,377.95	643,828.71
March	5,503,768.71	190,797.91	5,312,970.80	2,484,861.83	2,828,088.87	1,363,512.17	1,029,029.70
April	5,885,675.24	211,957.06	5,673,718.18	2,644,301.36	3,029,416.82	1,379,349.76	1,015,482.04
May	6,180,843.53	315,992.98	5,864,850.55	2,522,846.36	3,342,364.19	1,488,514.31	2,228,043.27
June	6,426,802.45	334,457.29	6,992,345.16	2,959,921.12	3,132,424.04	1,437,250.90	1,204,557.54
July	6,419,699.08	323,295.32	6,096,403.76	2,323,575.29	2,772,828.47	1,472,651.01	1,465,518.05
August	6,380,606.63	300,345.15	6,078,261.48	3,581,224.03	2,497,037.45	1,714.620.11	1,728,940.81
September	6,589,859.83	325,363.85	6,264,995.98	3,783,480.38	2,481,015.60	1,691,863.41	1,455,811.45
October	6,701,209.87	299,393.67	6,401,816.20	3,788,155.65	2,613,660.55	1,646,725.06	1,502,991.20
November	6,951,133.67	303,641.17	6,647,492.50	3,927,300.18	2,675,192.32	1,600,961.29	1,328,621.19
December	7,362,409.76	294,571.37	7,067,838.39	4,235.459.40	2,832,378.99	1,771,781.24	1,331,822.12
1880—January	7,735,257.38	295,517.60	7,439,739.78	4,436,788.55	3,002,951.25	1,832,963.04	1,145,194.98
February	8,187,012.49	322,568.93	7,864,443.56	4,602,286.49	3,262,157.07	1,607,663.89	1,178,111.92
March	8,621,097.49	351,130.35	8,969,967.14	4,811,894.33	3,458,072.81	1,815,133.31	1,396,037.88
April	9,662,354.59	388,558.16	9,273,766.43	5,846,536.60	3,427.259.83	1,739,297.37	723,794.73
May	10,306,078.79	454,193.73	9,851,885.06	6,361,320.05	3,490,565.01	1,552,240.91	975,061.26
June	11,266,771.77	477,431.60	10,789,340.08	7,397,131.89	3,392,208.19	1,781,937.29	848,339.08
July	12,039,010.00	475,446.56	11,563,563.44	8,125,241.25	3,438,332.19	1,890,161.44	1,095,528.25
August	12,749,623.28	462,987.28	12,286,636.00	8,635,394.80	4,651,241.20	1,904,452.70	1,177,448.42
September	13,618,276.03	382,398.71	13,236,327.32	9,287,193.94	3,949,133.38	2,075,105.26	1,115,184.71
October	14,020,877.32	391,331.55	13,629,545.84	9,448,615.77	4,180,930.07	1,999,487.98	1,598,285.06
November	14,656,891.55	341,262.67	14,315,628.88	10,038,824.08	4,231,804.80	1,859,991.50	1,064,146.39
December	15,369,758.67	361,184.83	15,008,573.48	10,913,283.49	4,095,290.35	1,987,283.54	1,207,928.35
1881—January	16,291,307.87	360,688.98	15,930,618.89	11,672,583.61	4,258,035.28	1,876,526.50	931,818.71
February	17,355,485.31	391,616.47	16,936,868.84	12,029,594.35	4,934,274.49	1,823,713.46	781,745.93
March	18,488,476.94	432,304.19	18,056,172.75	13,099,262.44	4,956,910.31	2,222,812.39	1,116,695.11
April	19,560,752.23	517,422.38	19,043,329.85	13,846,285.20	5,197,044.65	2,182,636.96	1,183,779.02
May	20,591,177.33	640,662.03	19,950,455.30	14,608,124.70	5,342,330.60	2,278,582.78	1,356,688.23
June	21,397,698.53	756,412.85	20,641,285.68	14,738,828.77	5,902,456.91	2,318,445.18	1,545,448.13
July	21,982,161.42	774,402.94	21,207,758.48	15,150,267.23	6,057,131.25	2,396,472.50	1,756,044.15
August	22,474,105.51	800,343.43	21,673,762.18	15,240,553.15	6,433,209.03	2,527,888.69	2,013,844.67
September	22,727,740.61	820,434.43	21,907,306.18	15,626,283.11	6,281,023.07	2,233,085.37	1,900,251.83
October	23,212,951.99	801,243.43	22,431,708.56	16,408,030.46	6,023,678.10	2,452,428.66	1,803,052.62
November	23,303,782.34	746,980.08	22,556,744.26	16,407,354.48	6,149,389.78	1,995,895.38	1,742,462.86
December	23,862,966.20	775,000.00	23,087,966.20	16.496,380.40	6,234,291.37	2,255,252.50	1,696,068.64
1882—January	24,243,382.26	762,111.53	23,481,270.73	17,788,245.97	5,693,024.76	1,984,325.23	1,547,945.23
February	24,704,933.81	765,000.00	23,939,933.81	18,541,340.52	5,831,402.36	2,062,742.98	1,601,191.43
March	25,663,298.81	887,210.88	24,776,087.93	19,039,760.73	5,736,327.20	2,305,538.30	1,453,354.46
April	26,519,252.22	993,150.92	25,526,101.30	19,963,183.00	5,562,918.30	2,145,965.63	1,381,093.10
May	27,518,619.53	1161,789.36	26,356,830.17	20,622,520.38	5,734,309.79	2,339,170.39	1,496,566.23

THE associated press is responsible for the statement that the Consul at Buenos Ayres reports in the province of Jujuy, Argentine Republic, has been found a lake of oil of 88 acres area and of an unknown depth. The lake is covered with a cap of asphalt. The analysis compares very favorably with the analysis of Pennsylvania and Asiatic oil. Extensive deposits in the form of springs and lakes have been found in the province of Mendoza. An English firm obtained a concession for working them. Analysis are said to indicate 40 per cent of pure oil. Now this Consul ought not to become excited over a bitumen bed that has lain there for 4,000 years or such a matter. These Consuls have a faculty for finding new oil deposits that knock the hazle stick into a mere squirt gun. Have the man gagged at once!

PRODUCTION TABLE.

SHOWING THE TOTAL DAILY NET YIELD OF THE PENNSYLVANIA OIL FIELD FROM SEPTEMBER, 1859, TO MAY 31ST, 1882, IN BARRELS OF 42 GALLONS EACH.

Years.	Jan.	Feb.	Mar.	April.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.	Totals.
1859	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	10	15	18	28	2,173
1860	30	50	89	215	500	1,000	2,000	2,500	3,000	3,500	2,000	3,000	547,439
1861	3,201	4,041	4,800	5,400	6,000	6,100	7,100	8,500	7,000	5,150	5,514	6,716	2,119,045
1862	6,000	5,300	7,400	8,000	9,400	9,000	8,500	11,000	13,000	10,565	8,053	7,238	3,153,183
1863	6,200	6,400	7,000	5,500	6,000	7,603	7,022	8,100	9,200	7,120	9,500	10,260	2,667,543
1864	8,100	6,300	4,500	5,000	7,000	5,100	5,600	5,700	7,180	5,545	10,100	10,320	2,215,150
1865	5,900	5,800	5,000	7,500	8,000	8,000	7,400	6,350	6,400	6,800	7,600	9,350	2,560,200
1866	9,200	9,100	5,000	7,100	8,100	9,500	9,350	9,440	12,000	10,400	11,000	11,165	3,385,105
1867	10,900	8,100	9,000	10,100	10,500	9,000	10,100	10,000	10,100	7,660	9,155	8,313	3,458,113
1868	8,200	9,400	8,100	9,300	11,000	12,400	13,000	11,800	10,250	8,225	7,580	7,150	3,540,670
1869	8,100	8,500	10,000	11,000	13,000	13,000	13,560	13,000	13,500	12,500	11,200	10,625	4,186,475
1870	11,348	11,802	11,509	12,400	15,990	13,400	13,800	15,950	18,203	18,000	17,061	15,990	5,308,046
1871	13,500	13,300	13,082	12,950	13,054	13,882	14,900	15,866	15,555	15,889	15,599	15,841	5,278,072
1872	17,943	17,894	15,680	16,221	17,402	12,140	16,933	17,440	16,598	18,450	25,942	20,630	6,505,774
1873	20,550	21,460	21,830	22,260	24,632	26,361	23,406	30,900	32,500	31,343	33,584	34,680	9,849,508
1874	32,800	30,940	29,760	28,104	29,442	31,222	33,987	32,000	29,461	29,944	29,231	28,101	11,102,114
1875	27,900	26,509	26,012	23,009	23,000	23,805	24,991	23,940	23,800	23,900	23,821	23,594	8,948,749
1876	23,102	25,440	23,560	23,800	24,628	24,400	24,890	25,300	25,900	26,400	26,500	25,900	9,142,940
1877	26,930	27,560	28,860	32,060	36,000	37,440	39,210	42,100	41,321	41,200	39,900	40,120	13,230,330
1878	39,200	39,900	39,200	40,100	41,111	40,820	41,200	42,900	43,999	44,480	45,200	43,900	15,272,491
1879	44,000	43,830	47,960	50,810	52,911	55,600	56,911	59,940	61,498	60,980	58,750	58,231	19,835,903
1880	59,982	63,890	66,215	68,063	72,080	73,104	73,794	74,980	71,941	77,491	76,112	74,080	26,086,692
1881	73,030	69,060	73,900	75,245	79,000	82,460	81,900	79,100	78,231	77,971	77,892	76,642	28,136,353
1882	75,028	74,910	74,751	76,690	78,601	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .

Total twenty-three years to December 31st, 1881, ... 186,532,067

WELLS COMPLETED.

TOTAL NUMBER WELLS COMPLETED EACH MONTH IN THE YEARS NAMED.

A. D.	Jan.	Feb.	March.	April.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.	Total.
1870	131	131	114	135	164	182	161	156	135	144	112	79	1,644
1871	98	68	70	81	95	150	139	116	125	186	161	181	1,470
1872	48	118	98	122	130	98	131	117	96	101	41	101	1,201
1873	100	105	105	110	106	180	112	116	116	111	108	95	1,364
1874	108	111	108	110	112	113	124	102	108	117	112	116	1,341
1875	184	186	194	180	169	194	208	206	208	215	213	228	2,385
1876	235	236	248	207	200	258	243	274	223	270	278	271	2,943
1877	275	249	296	264	336	598	314	254	332	460	398	391	4,167
1878	279	238	202	411	468	278	210	180	176	232	241	160	3,075
1879	144	136	221	263	395	336	335	280	269	229	225	268	3,101
1880	311	238	358	494	435	315	339	359	359	360	334	309	4,211
1881	232	218	201	310	412	371	348	335	314	302	347	405	3,795
1882	357	359	389	449	457	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .

THE WHOLE WORLD ON A STRIKE.

IT is not enough for us to have "646," Cadwalader, No. 1, Murphy and Mahoopany, all good for 1,000 barrels or more a piece, but we must have a flowing oil (?) well in Kansas, a big show—on the surface—in Mexico, a regular blizzard in Colorado, Alsace, Germany, a deluge from the Nile, at Friendship, N. Y., all booming in about the same time. But there is one blessed satisfaction, after all, and this arises from the fact that the first three named are the only boomers in the crowd. The remainder, all of them put together and boiled to the solidified state, could not as yet produce a fair sized chew for the ordinary young American. The whole world, it appears, is just now attacked with the disease termed "ile on the brain." If a man imagines that his farm overlies an oil deposit, and that some day a big strike is to be made there, he has no further care for the affairs of this world. He begins to puff himself up until his corpulency becomes very great. He argues that if that old Keystone State, of mongrel population, contains oil, why can't any other part of the world just as well, and he goes in for making a strike even in such corners of the universe as Kansas, Mexico and Nile, N. Y. The price of oil is no object, only give a man a show, and he's a millionaire, in his mind, on short metre. We hope these outside fellows will give us a little rest now for a time, at least, while we go to work and reduce the unknown quantity of Cherry Grove. After that it will be time enough for the rest of the world to go on a strike for oil.

SHIPMENTS.

Shipment of Crude and Refined, in Barrels of 42 Gallons each, reduced to Crude Equivalent out of the Producing Regions in the years named:

Year.	January.	February.	March.	April.	May.	June.	July.	August.	September.	October.	November.	December.	Totals.
1859	. . . .	. . . .	. . . .	. . . .	. . . .	. . . .	. . . .	. . . .	. . . .	. . . .	500	1,200	1,700
1860	900	1,200	2,500	4,640	11,000	21,000	58,500	64,300	79,000	78,400	63,400	38,400	423,240
1861	54,800	49,620	68,410	95,300	184,000	189,000	200,400	210,000	263,000	184,000	76,321	75,282	1,650,133
1862	98,212	93,101	103,762	201,430	256,320	385,211	375,440	376,311	401,210	406,500	213,611	190,463	3,141,521
1863	171,132	104,928	148,388	288,994	456,211	428,282	213,413	281,400	398,211	264,441	281,340	206,211	3,242,951
1864	148,324	101,431	96,486	132,486	125,218	221,386	110,490	101,218	228,430	220,386	201,441	154,765	1,842,001
1865	121,386	94,803	103,201	122,222	140,301	338,403	184,231	115,821	231,402	228,321	215,262	204,779	2,100,132
1866	132,200	121,320	180,206	260,231	280,320	390,260	200,410	290,210	390,431	318,616	210,016	236,701	3,010,921
1867	123,460	115,321	165,230	250,830	300,210	360,311	210,410	260,310	384,206	300,102	280,013	132,807	2,883,210
1868	150,220	144,201	200,410	280,430	310,408	400,046	390,402	320,210	480,306	260,240	280,260	265,377	3,482,510
1869	200,026	160,320	240,210	260,406	340,318	400,601	310,260	250,214	450,200	480,860	280,210	249,896	3,623,521
1870	360,933	312,910	354,400	390,003	407,908	418,516	410,707	516,679	542,217	557,624	519,780	444,254	5,235,931
1871	437,691	347,718	383,890	389,147	587,375	501,754	541,137	528,134	551,075	505,071	480,977	410,822	5,664,791
1872	476,966	407,606	276,220	428,512	510,417	529,228	591,238	621,954	541,607	607,468	477,940	430,786	5,899,942
1873	573,124	527,440	668,374	708,191	768,176	696,414	814,449	864,768	952,955	1,010,852	959,589	955,443	9,499,775
1874	843,663	501,220	518,246	803,409	899,027	815,413	940,281	793,865	1,014,570	543,341	546,117	602,348	8,821,500
1875	435,095	327,776	693,918	729,581	681,679	745,986	904,537	882,089	1,109,392	871,917	671,066	871,902	8,924,938
1876	677,289	519,193	623,762	603,037	646,150	921,862	1,228,530	1,203,402	1,154,549	524,190	871,496	1,190,983	10,164,443
1877	743,461	484,904	913,919	903,526	1,234,324	1,391,124	1,096,951	1,425,943	1,563,797	1,268,971	1,205,634	600,019	12,832,578
1878	775,791	774,234	741,512	846,636	960,894	1,135,119	1,330,454	1,655,651	1,434,225	1,747,390	1,281,410	992,688	13,476,000
1879	663,998	702,729	973,879	1,136,188	1,331,469	1,369,314	1,625,035	1,808,238	1,627,120	1,662,269	1,453,645	1,542,585	15,896,469
1880	1,650,409	1,395,151	1,613,371	842,268	1,095,259	975,083	1,231,611	1,304,129	1,252,635	1,665,933	1,226,030	1,335,613	15,587,447
1881	1,061,617	915,028	1,276,740	1,348,398	1,563,436	1,729,697	1,925,532	2,214,877	2,031,950	2,080,467	2,069,641	2,014,655	20,232,038
1882	1,817,973	1,829,779	1,729,237	1,751,294	1,843,455	. . . .	. . . .	. . . .	. . . .	. . . .	. . . .	. . . .	. . . .
. . . .	. . . .	. . . .	. . . .	. . . .	. . . .	. . . .	. . . .	. . . .	. . . .	. . . .	. . . .	. . . .	. . . .

THE BALDRIDGE FIELD.

IN this peculiar section, there is little of importance transpiring at the present time. A few wells are drilling, but the belt, in its passage to the southwest, is somewhat limited as to diameter. There are those, however, who have an abiding faith in the future success of the deposit, among whom are Mr. T. B. Hoover and his partner, Mr. Cotton, of the Petroleum Real Es- Co. These gentlemen have leased large bodies of land in the country southwest of Baldridge, and purpose testing the same forthwith. It has been demonstrated satisfactorily for some time past, that oil in greater or smaller quantity existed in that region of country, as far south and west as Rochester, Pa., where the Tumbler works succeeded in obtaining a three-barrel well six years ago. The oil here found, however, is of a heavy grade. The lighter species is supposed to lie east of Rochester, as Beaver Co. produces it in some degree. The drilling throughout that country, is fraught with many hardships, such as salt water deposits and quicksands. Pools doubtless will be found where these elements may not so severely interfere, and where oil may be more successfully drilled for. At Baldridge so far, there is but one well that can be termed a really successful one, and that is the last one completed by the Baldridge Oil Co., which has been spoken of on other occasions. It started pumping at about 100 barrels a day, 60 days ago, and is yet doing in the neighborhood of 25 barrels per diem. While prices remain as they are, the increase in Baldridge district will not be very great.

THE Oil-Well Supply Co. has opened a big store at the latest oil town — Garfield — and also contemplates Clarendon as a centre.

TABLE SHOWING TOTAL PRODUCTION OF CRUDE PETROLEUM IN PENNSYLVANIA AND NEW-YORK OIL FIELDS, AND CONSUMPTION.

From 1859 to 1881, Inclusive.

Year.	Oil Creek Division. Bbls.	Pithole District Bbls.	Tid'ute and Fagundas District Bbls.	Central All'g'ny Divis'n. Bbls.	Butler, Armstr'g & Lower Allegany Bbls.	Clarion Division Bbls.	Bradford Division Bbls.	Bullion District Bbls.	Warr'n Div. Bbls.	Beaver Div. Bbls.	Alleg. Co., N. Y., Div. Bbls.	Yearly Total. All Districts. Bbls.	Consumption. Bbls.	Yearly Average Price.
1859	2000	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	2000	500	20.00
1860	500000	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	500000	300500	9.60
1861	2113609	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	2113609	1280000	.49
1862	3056690	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	3056690	1472000	1.05
1863	2611309	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	2611309	1992800	3.15
1864	2216109	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	216109	1946620	9.87½
1865	1585200	912500	20500	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	2518200	2238610	6.59
1866	2302700	1095000	490000	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	3887700	2574401	3.74
1867	2393300	814000	839900	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	4047200	2960561	2.41
1868	2672617	445500	729000	26000	. . .	. . .	. . .	. . .	. . .	. . .	. . .	3873117	3404645	3.62½
1869	3462500	365000	535000	22500	45000	. . .	. . .	. . .	. . .	. . .	. . .	4430000	3716341	5.63¾
1870	2745528	173585	723838	713150	918644	. . .	. . .	. . .	. . .	. . .	. . .	5274745	4562642	3.89
1871	2040263	182054	697887	1083386	1091458	310293	. . .	. . .	. . .	. . .	. . .	5405341	5178038	4.34
1872	1429685	145065	847199	881140	2658080	829079	. . .	. . .	. . .	. . .	. . .	6790248	5954742	3.64
1873	1094389	119864	895983	851934	4402563	2526231	. . .	. . .	. . .	. . .	. . .	9890964	7847953	1.83
1874	734247	55770	373325	564978	5160265	3921267	. . .	. . .	. . .	. . .	. . .	10809852	7875145	1.17
1875	504639	35130	351407	343905	4712702	2821214	18509	. . .	. . .	. . .	. . .	8787506	9256416	1.35
1876	611884	37450	354284	333640	4755623	2377700	382768	64220	51337	. . .	. . .	8968906	10414877	2.56¼
1877	734858	60380	312700	474262	5431072	3021120	1465451	1306342	151371	62085	. . .	13019641	11977107	2.42
1878	686948	60000	308780	363710	4552815	2276408	6482400	505265	108300	92490	. . .	15437116	13783672	1.19
1879	389400	36500	227900	258652	2876787	1438342	14268945	289591	45550	82100	. . .	19913767	16851222	.85⅞
1880	335342	36500	168542	166143	1737969	868984	22343202	146672	91655	102956	. . .	25997965	18228905	.94½
1881	293504	31938	146474	145374	1394706	844442	22817975	128338	438000	102956	607106	26950813	21263740	.85¾
	34516721	4706236	7022719	6228774	38737684	21235080	67779250	2440428	886213	442587	607106	186502798	155081437	3.92½

RECAPITULATION.

Production by Fields.—1859 to 1881, Inclusive.

Oil Creek Division, including Shamburg, Pleasantville and Enterprise,	34,516,721	Clarion County,	21,235,080
Pithole Division, including Henderson, Morey and Ball Farms,	4,706,236	Bradford Division, including Elk County,	67,779,250
Central Allegany, including Scrubgrass and West Hickory,	6,228,774	Bullion Field,	2,440,428
Butler and Armstrong Counties, Lower Allegany Division,	38,737,684	Warren, Stoneham and Clarendon,	886,213
Tideoute Division, including Economite, Henderson, Farms, etc.,	7,022,719	Beaver (Smith's Ferry) Division,	442,587
		Allegany Division,	607,106
		Total all Divisions, Production,	186,502,798
		Total Consumption,	155,181,437
		Difference,	31,421,361

This difference includes, of course, all available stocks on hand, all sediment and worthless surplus, and the amount estimated for shrinkage, which would reduce the available stocks to the figure given elsewhere.

This table is made to show the amount of oil saved and used. It differs but little with the first production table published in the AGE, and was compiled by a producer who possesses valuable records.

Area of Developed Territory.

Venango County, Pa	25,600 acres.	Clarion County, Pa.	19,200 acres.
Crawford County, Pa.	6,400 "	Butler County, Pa.	28,000 "
Forest County, Pa.	1,920 "	McKean and Cattaraugus	63,800 "
Warren County, Pa.	10,500 "	Allegany	18,360 "
Armstrong County, Pa.	5,120 "		
Total			178,900 acres.

This covers all territory productive, whether light or small, as yet discovered in the States of Pennsylvania and New-York.

FACING THE MUSIC.

IT is a common expression, frequently heard, that the terrible drop in prices will ruin two-thirds of all the operators in the country. A more absurd and foolish statement was never made. It is true many will be compelled to do what perhaps they never expected to do, let their notes go to protest, and for the simple reason, that bankers refuse to discount, even what they know to be first-class paper. It was ever thus in the Oil Country. When producers are in need of assistance in this direction bankers are always short. "I would not discount a government bond to-day," said a prominent banker the other day in response to an inquiry by a patron for a loan. Now, it does not accord with the right kind of principles, justice, or anything else, for such a statement to be made. Why should bankers be depending upon the price of oil for money to loan? Is it because they loan depositors' money, and when the price drops their

balances are drawn upon? There are seasons, of course, when money flows to certain centres and causes a scarcity in certain other sections, but we claim that there is no good reason yet offered, unless it be the one just stated of using depositors' money, why the banks of the Oil Country could not, and cannot, go on discounting as before the season of depression set in. The idea that a man must carry around with him notes and accounts to double the value of his own indebtedness and yet be forced to look upon a notary's proclamation, is absurd in the extreme, and this occurs for the simple reason that his banker can't do as he used to—take good paper as collateral security. A good note ought to be taken any time by a banker in preference to an oil certificate; for, with this, the holder can proceed to any money centre and obtain a fair percentage of its face value, whereas, a stranger with a strange note in his hand might paddle all the centres of the country without success.

But, notwithstanding this, the great majority of producers are facing the music like men, and will come through perhaps in better condition, in less than a year, than they expect. It is a poor time to dispose of property if it can be helped, and it is, on the other hand, a most opportune time to make investment. The present condition of trade should call forth immense sums of money from their secret places. And it is not improbable that millions of dollars will flow into the Oil Country from New-York, Philadelphia, Pittsburg and Cleveland: as it is as certain as the world stands that those who invest now do so with all chances in their favor. Therefore, while it is hard for some to sing and dance and make a turn at every call, yet we believe there is sufficient bottom to the representative producers to sustain them through the limited period of depression that is likely to ensue. They, many of them, have previously faced more harassing music than any they have lately heard yet. This is not a comparison to the "dog days" of 1874, when oil went to forty cents a barrel, and the cost of wells was nearly double what it is to-day. Behind all clouds there is a beautiful gleam of sunshine and it will break through them in the proper time. So it will be with the oil trade, the time is coming when 100,000 barrels a day of oil will be required for the trade. It may be obtained, and it may not.

EXPLANATIONS TO MAP ON LAST PAGE.

THE ×, as usual, marks the dry hole everywhere. Scale 2 miles to 1 inch.

On lot 671, near the southwest corner, R. E. Green has a well now drilling that will be completed within ten days, and on lot 672, Goldsboro & Smith are also drilling. This lot has been subdivided and sold at figures ranging from $200 to $350 per acre and one-eighth royalty.

On 745, near the lower edge, the mark of a duster should be placed near the northeast corner.

At Balltown Grandin Bros. & Co. have drilled several wells — one or two of which yield a small quantity of a dark-colored and heavy species of oil.

The dry hole near the southeast corner of the map represents the Brookston duster, drilled by Badger and others two years ago. No sands of moment were found in this venture.

But one Darling well is mentioned or shown, while there are two.

The town of Garfield is located near the southeast corner of 646.

On lot 556 a strong gas well was obtained on the seventh inst. The territory is marked light, because it is probable that a little oil will be obtained in close proximity, as indicated by the Roth well on the northwest corner of 560.

Two lots east of 575, marked with pen on the margin, will locate the Shaw & Green well, drilled in 1877. An engraved plate of its record appears elsewhere.

The narrow gauge railroad, now building from Clarendon to Garfield, follows the course of Farnsworth run and will circle westward from the public or plank road, which also follows the branch.

The United, or Warren, Pipe Line, and the Union, both follow the course of Farnsworth run, and the United is now engaged in running a line to Tiona, where loading racks will be constructed. A connection will also be made in Forest County with the main line, which extends from Kane to the lower country.

The Mahoopany Well has not been opened, June 14th, so that its capacity cannot be determined; but it will doubtless be a large producer.

Lot 659, near the centre, is the *locale* of the late Cadwalader mystery — No. 2 — which is just now attracting much attention. It is drilled to the sand, and there stopped for further orders.

BUSINESS NOTES.

Messrs. CARROLL BROS., of Richburg, are giving attention to the Warren field.

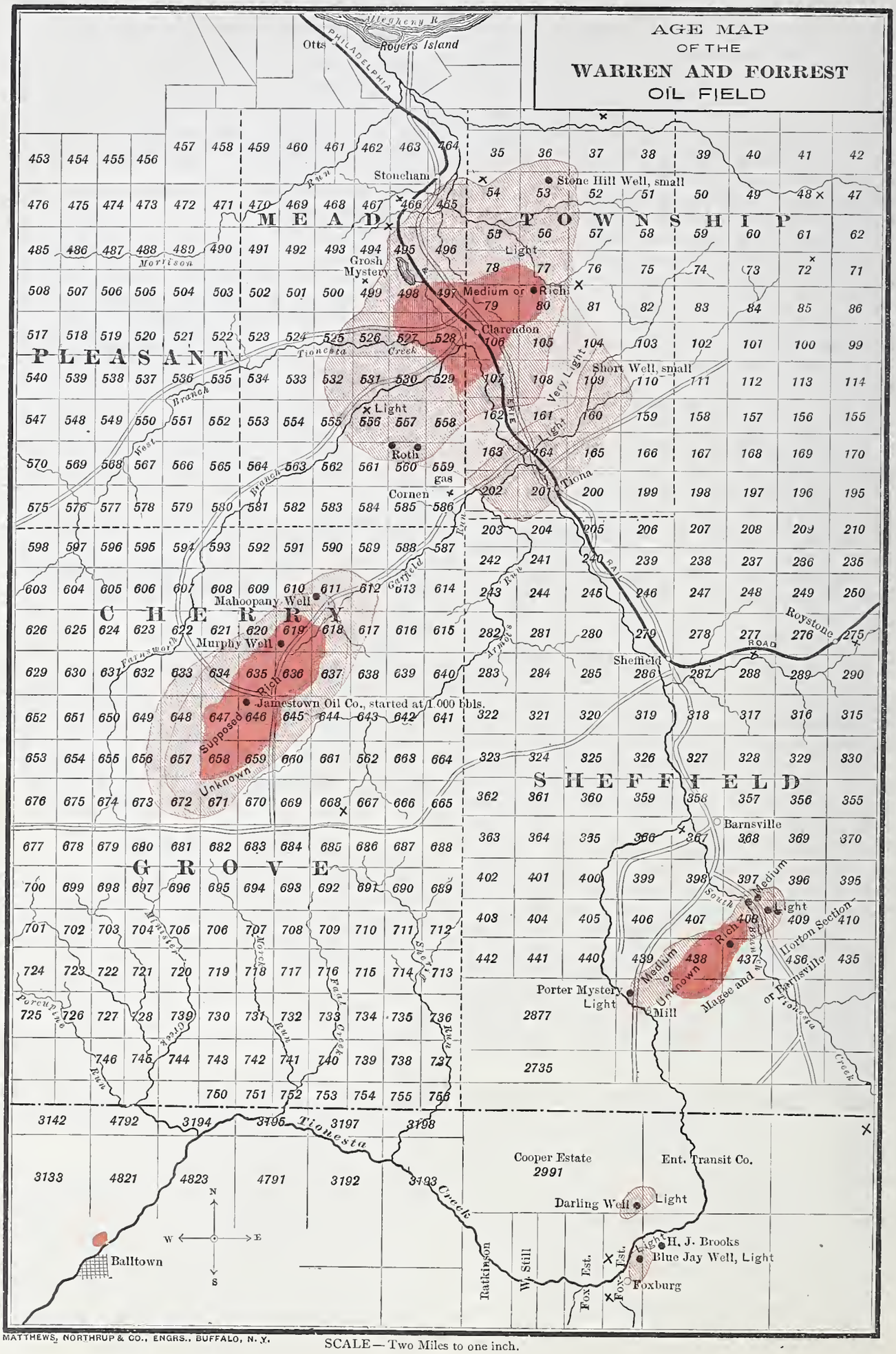
Messrs. L. EMERY, JR., & Co., open the throttle with a fresh "ad." on the outside. Read it, it will do the purchaser of oil-well supplies good.

J. W. ALEXANDER & Co. is the only dealer in Olean, in oil-well supplies, that gives that business especial attention, and the firm knows how to please the trade.

Mr. S. R. DRESSER, who has recently patented a first-class oil-well packer talks through this AGE regarding it. There is no denying it, the Dresser cap packer is a good one.

BEECHER & COPELAND, who have been established in Warren in the general hardware business for many years have a large branch store at Clarendon, especially for oil-well supply trade.

TRADE in hardware and general oil-well supplies in the northern field and Allegany is falling off. But little drilling will be done next month in either district, and, as a result, the decline in production will certainly be very great.



MATTHEWS, NORTHRUP & CO., ENGRS., BUFFALO, N. Y.

SCALE—Two Miles to one inch.

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THE PETROLEUM AGE,

A MONTHLY MAGAZINE

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EASTWARD.		MAY 25, 1882.		WESTWARD.	
Bradford Express.	Fast Line.	New-York Time.		Fast Line.	Pittsburg Express.
.....	1.40 P. M.	Ar.	Richburg Lv	6.45 A. M.	1.40 A. M.
.....	12.30 "	"	Olean "	8.00 "	2.45 "
7.50 P. M	10.50 A. M.	"	Bradford "	10.00 A. M.	4.30 P. M.
6.15 "	9.20 "	Lv.	Kinzua. Ar.	11.40 "	6.00 "
5.30 P. M	8.45 A. M.	"	Warren "	12.06 P. M.	6.40 "
4.42 "	7.26 "	"	Clarendon "	12.55 "	7.57 "
3.10 "	7.30 "	"	Titusville "	1.30 "	.....
3.20 "	6.40 "	"	Oil City "	2.20 "	8.55 "
2.00 "	5.40 "	"	Franklin "	3.10 "	9.45 "
12.43 "	3.30 "	"	Foxburg "	4.27 "	12.10 "
12.13 "	3.18 "	"	Parker "	4.38 "	12.27 "
9.00 A. M.	9.45 P. M.	"	Pittsburg "	7.50 P. M.	6.20 A. M.

ADDITIONAL TRAIN—leaves Bradford 7.00 a.m. Arrives Warren 10.08 a. m., Clarendon 10.25 a. m. SUNDAY TRAINS leaves Bradford 8.30 a.m., 3.00 p. m. Arrive Kinzua 10.10 a. m., 4.40 p. m., Warren 10.45 a. m., 5.40 p. m. Leave Warren 9.25 a. m., 4.20 p. m., Kinzua 10.25 a. m., 5.00 p. m.; arrive Bradford 12.05 noon, 6.40 p. m.

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THE PETROLEUM AGE.

VOL. I. BRADFORD, PA., JULY, 1882. NO. 8.

PETROLEUM.

CHAPTER VIII.

From 1865 to 1867—Operations on Oil Creek—Bull Run—Cow Run—Calf Run—Pioneer and its Surroundings—Petroleum Centre—The Dennis Run and Triumph Territory—The Economite Land Co.—Other Views of the Region.

THE year 1866 opened with fair prospects for the trade. Oil was commanding $4.50 a barrel at the wells, but a special revenue tax of $2.00 a barrel, which had been levied by act of Congress a few years previously, had a tendency to depress the otherwise active spirit of the operator of that day. This tax, however, was removed, or the act by which it was imposed repealed, in the latter part of May, and the $2.00 a barrel which previously had gone into the treasury of Uncle Sam went direct to the replenishing of the resources of the producers. There was great rejoicing over this event. The tax, in the first place, was an imposition that no government should ever have tolerated. But as the error was detected, and the evil remedied, it must be passed as one of the strange features of national law.

As stated in the previous chapter, the tributaries of Oil Creek, between Petroleum Centre and Shaffer Farm, and the Dennis Run territory at Tidioute, were the two principal arenas where the actors of the business most congregated. The former developed the faster of the two, and though more extensive, perhaps, as to area, was not so productive in the final outcome. It is true some very fine wells were obtained in the vicinity of Pioneer, and a fair sprinkling of Oil Region capitalists of later years date their rise from obscurity and comparative poverty, to their success in this vicinity. In the early years of the business the course of the creek only was followed by the explorers, as it was falsely supposed that no oil existed beyond the limits of the creek bottom. As a consequence, large portions of the oil belt, which proceeded in a S.S.W. direction, were skipped over. The natural windings of the creek led the drill in directions where the sand rock did not exist, something after this fashion:

Creek.

Where the belt cut straight across the corner the pioneers in the district, of course, failed to hit it. Pioneer Run, Benninghoff Run, Bull Run, Cow Run, Calf Run, and other ravines which emptied into Oil Creek at those points where the belt did not touch it were developed by accident, as usual. Some person makes a desperate attempt in the throes of financial death to revive his failing fortunes, and live, and, as a rule, all new fields of importance have sprung into existence as a result.

Petroleum Centre, which up to this date had maintained a rather novel appearance, began now to put on regular Oil Region airs—that is, it commenced to fill again with all grades of the human race. Pioneer, which had almost faded and become extinct, revived, and people from many other sections hurried to take part in the exercises to follow. The Benninghoff Farm, upon which there had been completed a few nice wells during the fall of 1865, attracted much attention, especially of faded operators of Pithole, Here we find "The Benninghoff Mutual Petroleum Company," of which Mr. John L. McKinning was the active spirit, just commencing to enlarge operations. F. W. Andrews arrived early in the season and stuck stakes for a well, which resulted in a 300 barrel producer. This was the cause of a great influx of people to the region, and the upper portion of Oil Creek, or rather the central portion, resumed its former greatness as an excitement generator. The usual board shanty sprung up on all sides with a rapidity that would astonish the uninitiated. At the Centre, churches and schools were established and every effort made by the good people that was possible to curtail crime and maintain a moral reputation for the town. This, however, was a task that assumed greater than herculean proportions. No town in Oildom ever gained such a reputation as this in so short a time for moral lawlessness and infamously depraved society. Even Pithole was outdone, for in the latter some care was taken to let darkness form a cover for shame. Here at the Centre, however, it was not so. Day, as well as night, the brawls of human beasts, drunken not only with adulterated spirits of the manufacturer, but with debauchery and the excitement attendant, were heard, at a hundred resorts, whose "cards of invitation"

were always plainly visible to the naked eye. And so we might go on and dwell at length on this part of the subject, but we leave the reader to infer the remainder. Some good people dwelt in Sodom—one at least—and the same was true of Petroleum Centre during the exciting days of 1865 and 1866.

This second boom was the cause of many good fortunes being made in this section. The principal line or direction of the belt became pretty well established and it was followed over hills and valleys with great precision. Wells were drilled with remarkable speed and the daily yield of oil was increased during the season considerably, ascending from about 9,000 barrels on the 1st of January to over 12,000 per day in July following. This also occurred in the face of a big decline in the production of the Pithole wells.

This increase, moreover, was aided largely by the progress of the drill on Dennis' Run at Tidioute. While the operators of Pioneer and vicinity were pushing things with all their might, those of Dennis Run were doing likewise, neither apparently being conscious that the other was in existence. At that time oil fields remote from one another were operated by a distinct and separate class. In later years this state of things was revolutionized as competent producers made it their business to visit each new field and invest where there seemed promise of good returns. In every field that opens, therefore, a certain proportion of the oldest operators will be found as active and energetic as they were at any former time or place for the couple of decades that have constituted the life of the petroleum trade. After the Dennis Run bottom land became exhausted, or rather after the territory came to be fully occupied by leaseholders, those who desired drilling territory were forced up the hillsides. When derricks were first erected, therefore, on the point of the hill which rises from the junction of Dingly and Dennis Run waters, those who ventured the outlay were termed "fools," "idiots," and other ungrateful titles. Nevertheless the first well completed on the point, owned by Capt. A. J. Thompson and others, started with a production of over 150 barrels a day. This was completed about the 1st of June and opened the way for a huge excitement on the entire hillside extending back into the county for several miles. As well followed well westward the result seemed to be to increase the interest in the territory, as wells of the capacity of from 200 to 400 barrels a day were frequently obtained. The summit was finally scaled and, amid the confusion of drilling and producing wells, oil tanks, and every other species of oil-well appliance, the town of Triumph was erected. It was named this from, or by, the company of the same title who controlled the land. The stock of this company was held by parties in Pittsburg principally, and was represented by J. S. Weible. Leases were let at one-half royalty and a bonus of from $250 to $500 per location of one-half acre each. Oil ranged in value during all the spring and summer months nearly $4.00 a barrel and, as a consequence, the profits which arose to producers were quite large. Triumph Hill turned out as much money to the square acre as any other spot of Oildom. Its day was not of remarkable duration, however, as regards this heavy yield. But the life of the average well equals and perhaps exceeds that of any other locality. The sand-rock — the regular pure white conglomerate — was of the greatest thickness and purest quality the entire Region afforded. In places this rock was found to be over 100 feet thick and possessed an oily texture all the way through. Near the bottom, however, it appeared to be infested with a large body of salt water, which quickly made its unwelcome presence known in each well. The wells started with a large volume of oil as a rule, which began in a few days to be supplanted by this brine. This was the cause of a general rush from the field, but not until every available half acre within the bounds of the paying belt had received its proper puncture.

While Triumph Hill was in a flourishing condition, the Economite Oil Co., on the east side of the river at Tidioute, was giving attention to its territory upon which it already had half a dozen small producing wells along the river bank. A few leases were let on the summit eastward from the river to outside parties, among whom were Fisher Bros., and Ralston & Eckert. Both of these parties obtained large wells and the result was a regular scramble for territory on the east side of the river. Explorations extended some distance to the east and south beyond the boundaries of the oil conglomerate, whose limits in the latitude were confined to a very moderate area. The Economite Company absolutely refused to lease lands after the success which the first two leases acquired, and proceeded on its own hook to develop the resources of its possessions. These, as stated in a former issue, consisted of five or six thousand acres. But, although strenuous efforts were made by the company to find something of value in the forests east and south

of the Fisher and the Ralston developments, it was but poorly rewarded, except in the fact of establishing a first-class boundary to the territory considered good. That which they had already was first-class; the wells, as a rule, starting at 100 barrels, or more. These operations, together with those of Dennis Run and Triumph Hill, caused the little town of Tidioute, which had a reputation for superior length, though limited as to diameter, to enlarge at a most wonderful pace. The town had been head-quarters for many years for throngs of lumbermen, and at the time of the breaking out of the oil excitement was fairly prosperous in this direction. During this season there was a very large influx of Pithole and Hickory operators, many of whom came without any means whatever. But the apparent certainty of obtaining paying wells in the line pursued by the operators, which was westwardly from the village, led them to risk all that remained of their Oil Region acquirements—cheek. Leases were therefore in good demand and operations became exceedingly active. As stated, this brought hundreds of fresh applicants for *home* sites, and, as a result, the village sprang into prominence with a bound. Its reputation as an oil centre became national, and to the present day maintains all of the beauty and luxurious adornments adopted in the days of great prosperity.

About this time, moreover, there was considerable skirmishing in progress throughout many other parts of the Region, and in numerous instances near approach was made to rich deposits, though but few succeeded in developing anything of importance. Between Edenburg and Shippenville, in Clarion County, a well was drilled to a depth of 700 feet and abandoned as a failure, because no oil was found, the idea prevailing that 500 or 600 feet from the surface in any locality should determine the existence or non-existence of the sought for liquid. This well was owned by Chandler and others. In after years it proved to occupy a prominent position on the regular Clarion oil belt. The lands of Butler County; as also those of Armstrong, which in later years proved to be exceedingly rich in oil, were leased by highly titled oil companies who had more regard for leases than for boring oil wells. There is always more or less excitement caused by the appearance in any community of an oil man in search of a location for a well. He becomes an object of great interest to all the people of the neighborhood and if possessed of pleasing address is very likely to obtain a foothold in their esteem that results in much benefit to himself. If, perchance, he should fulfill a few obligations that had a tendency in the direction of prosecuting his undertakings with due diligence, he would become the lionized hero of the hour, and no other man could accomplish anything in opposition. But there are few cases on record where the scalper, as he is termed, has ever succeeded in obtaining the good will of the people. On the contrary, he usually finds himself surrounded by perplexing difficulties arising from the adverse attitude of land owners. This springs either from disappointment on their part, in the character of the stipulations of their contract with the lessee, or from the latter's failure to perform all that he represented at the outstart. As a rule they are cunning and shrewd and before signing documents usually have them so worded as to give them the advantage in some manner or other. On the discovery of this unpleasant condition of things the aged soil owners turned affairs upside down for a season. So Butler, Armstrong, portions of Allegheny, Clarion, Forest, Warren, and McKean Counties, all came in for at least a moderate share of the pioneers' attention. During the entire season, however, the only important developments that occurred were those which have been described above. Dr. Shamburg about this time began to speculate in the territory lying between the Oil Creek tributaries and Pleasantville, afterwards known and designated as Shamburg. At first his success was not very exalted and it seemed for a time as if nothing of value could or would be brought to light. The field improved with age, however, and finally grew into proportions of considerable magnitude. During the summer there was some activity in the region between Pithole and Pleasantville, a few miles east of Shamburg, where some small wells were obtained which opened the way finally for the development of the Pleasantville district. All these will receive attention at the proper time.

During this season, 1866, Messrs. Chess, Carley & Co., together with Graham & Thomas, the pioneer developers of the Kentucky and Tennessee oil region were pushing operations on Boyd's Creek in Kentucky and a couple of score or more of wells were drilled, nearly all of which pumped or flowed more or less oil. This oil was of 40° gravity and was tainted with sulphur. As it was difficult to refine the product the supply on hand increased to such an extent that the price dropped from a dollar and a half a barrel to 25cts. at the wells. Operators became discouraged, and be-

gan, in September, to move to other and more promising regions, determined to return again when the price of the product would warrant further explorations. Thus ended the second series in the history of the Kentucky and Tennessee oil region. The third series opened in 1869 when the price had risen to $2.00 a barrel.

In Cumberland County especially there have existed for ages, the most interesting and promising surface "shows" to be found anywhere in the world. Along Scrub, Indian, and Greasey Creeks on the Cumberland River, these "indications" are especially noticeable. There have been numerous springs that have yielded from one barrel to three barrels of surface oil per day. This oil is very valuable for lubricating purposes, and with railroad facilities, such as the Penn region enjoys, the waste places of Kentucky and Tennessee could certainly be made to blossom into blooming oil centres. Whether an illuminating species of good qualities exists is a question for the future and the drill to determine. There is a vast area of territory over which the future prospector must wend his way in search of the "pot of manna" which old Kentucky claims to possess in the shape of a valuable oil deposit.

During this year the Oil Creek section is said to have produced above 2,300,000 barrels of oil and the Pithole district managed to cast up about 1,000,000 barrels, which, with Tidioute's 500,000, made a total for the year of upwards of 3,500,000 barrels. It was estimated that the consumption for the year amounted to about 2,500,000 barrels and the average price for the entire year was $3.70.

There were no new or startling developments during the year in any quarter except the fact that the creek bottom idea of an oil belt was totally annihilated. Some disastrous fires occurred, which destroyed numerous oil wells and tanks and even lives. In September a conflagration broke out at the Thompson & Co. Well on the hillside ascending from Dennis Run to Triumph Hill, by the bursting of a 600 barrel tank, that resulted in great damage. The oil rushed down to the boilers in the valley beneath where workmen were employed and, after enveloping them in a wave of oil, ignited and became a horrible sheet of flame. Two men gave up their lives at the first well encountered by the torrent, and others farther down the stream narrowly escaped a similar fate. About 40 well rigs with all connections were sent heavenward in a very short period. Other fires of lesser note, however, occurred on the Benninghoff and other farms on Oil Creek, and Pithole suffered extremely. Nearly the whole town was consumed during the year, the element seeming to have full sway when started, even in the face of heroic opposition on the part of the fire organizations. The latter place ever after remained unbuilt, and the "owl and cormorant" screeched undisturbed where once the indomitable producer swayed his sceptre in great pomp and splendor. We pass into 1877 with business fairly prosperous and the trade assuming the dignity it deserved.

(TO BE CONTINUED.)

THE REAL ESTATE MARKET.

IN the matter of values a perceptible change has come over the face of the Bradford field. Wells that three months ago were considered worth at least $1,000 each are now freely offered at $500, and few takers even at that. In Cherry Grove wells can be sunk fully as cheap as in Allegany, for the reason that no tubing, sucker rods or torpedoes are required. The wells flow through the casing and the only drawback to the business arises from the necessary expenditure that will occur in furnishing tankage. Were it not for this fact old wells in the Bradford field would to-day command much better prices than they do.

During the month which has elapsed since our last issue trading in Warren County has been exceedingly lively. By actual count of sales up to the 4th of July there were 248 that became known to the public, besides, perhaps, another 100 that were never known outside of the parties making them. The largest transaction of the month was one of $105,000. This was the Mahoopany Co. to the Forest Oil Co., of the well of that name and property belonging. The other trades ranged from $1,000 up to $50,000, and aggregated $1,840,000. It might be asked here whence came so much money? But, aside from the regular army of producers, many of whom are possessed of sufficient means and credit to always take a good thing when they see it, there have appeared a number of fresh dealers, who have become inspired by the excitement that has raged for a season.

Pithole alone exhibited a parallel in this direction. The prices paid for territory in Cherry Grove are moderate, however, when compared with Pithole, but the rush to obtain sites for drilling has been about equal. While large sums, as indicated above, have been deposited, the pro-

ducers never had a better chance to obtain a large production at small cost. Take, for instance, an example that may be furnished in this way: To obtain a production of 1,000 barrels a day in Bradford or Allegany it would require the sinking of at least twenty-five wells in the very richest portions of either district. These, at a cost of at least $2,500 each, give a total of $62,500, to which should be added the price of the land, 100 acres, at $400 per acre (low estimate) and we have a total of $102,500.

Five acres in Cherry Grove,	$ 7,500
One well,	4,000
Extra tanks,	2,000
Total,	$13,500

Balance in favor of Cherry Grove, $89,000. Of course, this applies only to original outlay. In the first statement there is still the value of the land and fixtures thereon to be added to actual value of property. But this shows with what comparative ease a large daily production can be obtained in Cherry Grove. Speculation still continues on a large scale. Territory three miles in advance to the southwest, and as far to the northeast as the gas wells will permit, commands large bonuses and one-eighth royalty. Until a limit is set to the field by the drill it is presumed that this state of things will continue.

THE LATE STRIKES AND SOME OF THEIR LESSONS.

AS foreshadowed in an article in the May issue of this magazine, there have occurred of late some very unpleasant disturbances between employer and employee in various sections of the country, especially Pittsburgh and New-York. The first important move was made at Pittsburgh by the iron workers, and this was followed by a "kick" of the freight handlers of New-York. Others of less prominence have transpired, but in most cases the difficulties have been adjusted and the laborers have returned to work. From the freight handlers' strike serious damages have resulted to the great shipping interests of that city, and merchants, feeling the pressure, have resorted to the law for protection in the matter.

It is unquestionably a dispute that should, and could, be easily settled in a very short time were a desire to that end — expressed or implied — manifest on either side. This question, moreover, is not to be settled in the year of grace, 1882. It is the old, old story of capital vs. labor, and the great danger at the present time is in the fact that labor is combining with a view to the control of the situation. It certainly possesses the power innate, and if trained and exercised, capital might as well cast up the white flag now as at some future time. The demands of the laboring classes may be arbitrary, and may result in the suspension of business in many instances, to the great damage of capitalists, yet it may be found necessary to adhere to all that is required, for the time being at least. It is more than likely that this "strike" business, like other organized efforts, will be conducted to too great a length, and that national enactments will be required at no distant day to meet the necessities of the hour. It is for capital to avoid such an issue if possible. Beyond question in numerous instances those who have depended upon monopolies (or organized capital) for sustenance have suffered privations and hardships such as people of position and independence know nothing of. Especially has this been so in the great coal and iron regions of this State. The Molly Maguire society, with all of its grim shadows and ghastly scenes, possessed some elements of justice. History fails to record an instance of an uprising of the populace without some provocations. Therefore we claim that it is the duty of capitalists to avoid causing the distress which results in such unhealthy revolutions. There is one organization in the Oil Region to which reference is frequently made regarding its monopolistic tendencies, but, strange as it may appear, no man was ever known to enter its employ and maintain a strict integrity who did not become a capitalist in time himself. We refer to the Standard Oil Company, an organization noted for grasping and domineering tendencies. Men who once become its friends seem to always remain friends. There must be some cause for this—a cause having origin in sound sense and a thorough knowledge of good business principles. Who ever heard grumbling in the ranks of the host of employees of this company? And yet the name of the company itself is obnoxious to a large share of the oil trade. Were all mammoth corporations, or monopolies as they are termed, as careful of the welfare of the men they employ as this great giant of the oil trade there would be fewer labor strikes in the country. The railroads would not be forced to submit to the damaging delays in the transmission of supplies that have characterized their business in the east during the past month. It is undoubtedly one of the principal causes of the great success of the Standard Company—that its labor force is proud to be such. Who ever heard of a coal miner being proud of earning half a dollar a day

with which to support a family of from five to ten members? A similar question could be asked of a majority of the railroad hands of the country.

The growing disposition of the workingmen of the nation to combine for protection is very ominous; if not dangerous. It can be checked only by capital granting such support and division of gains as shall tend to elevate the spirit of the former class and make them contented. Otherwise, troubles will surely abound, and strikes will multiply.

DEPARTMENT OF SCIENCE.

Corbett's New Process Apparatus, or Rig for Drilling and Pumping Oil and Artesian Wells.

Mr. Geo. Corbett, of Bradford, Pa., is the inventor of the drilling and pumping apparatus presented by engraving in this number of the Age. Those who are acquainted with the business of drilling and producing oil will perceive that he does away with the walking-beam entirely and setting what may be termed a sampson-post in the derrick in the place occupied by the dead-head post of the rig now in use. This sampson-post is constructed of two upright posts well braced and secured firmly to the mainsill. On the top of these posts are fastened arms on which the journals of the drilling-wheel rest. It will also be perceived that the band-wheel is placed almost wholly in the derrick and occupies a space that is not at present utilized by this means. The entire rig is shortened, covering an area of fifty feet in length by twenty-one feet in width only (the rig in general use is from eighty-five to ninety feet long), thus making a large saving of space, timbers, lumber, rig-irons and labor. In place of the walking-beam he substitutes a drilling wheel, and in place of the pitman a short piece of cable, to which the temper-screw is attached, as shown in fig. 1. One of the great advantages gained by this method is the following: the end of the walking-beam when in motion describes the arc of a circle, and as the temper-screw is fastened on the end, it gives it an oscillating motion which is conveyed to the cable, causing it to rub against the side of the well, thereby wearing it out rapidly, whereas by the use of this drilling wheel the tools are raised and dropped in a perpendicular line, avoiding the unnecessary wear of the cable and at the same time a much harder blow is struck by the tools as they fall more rapidly, having no walking-beam to deter them.

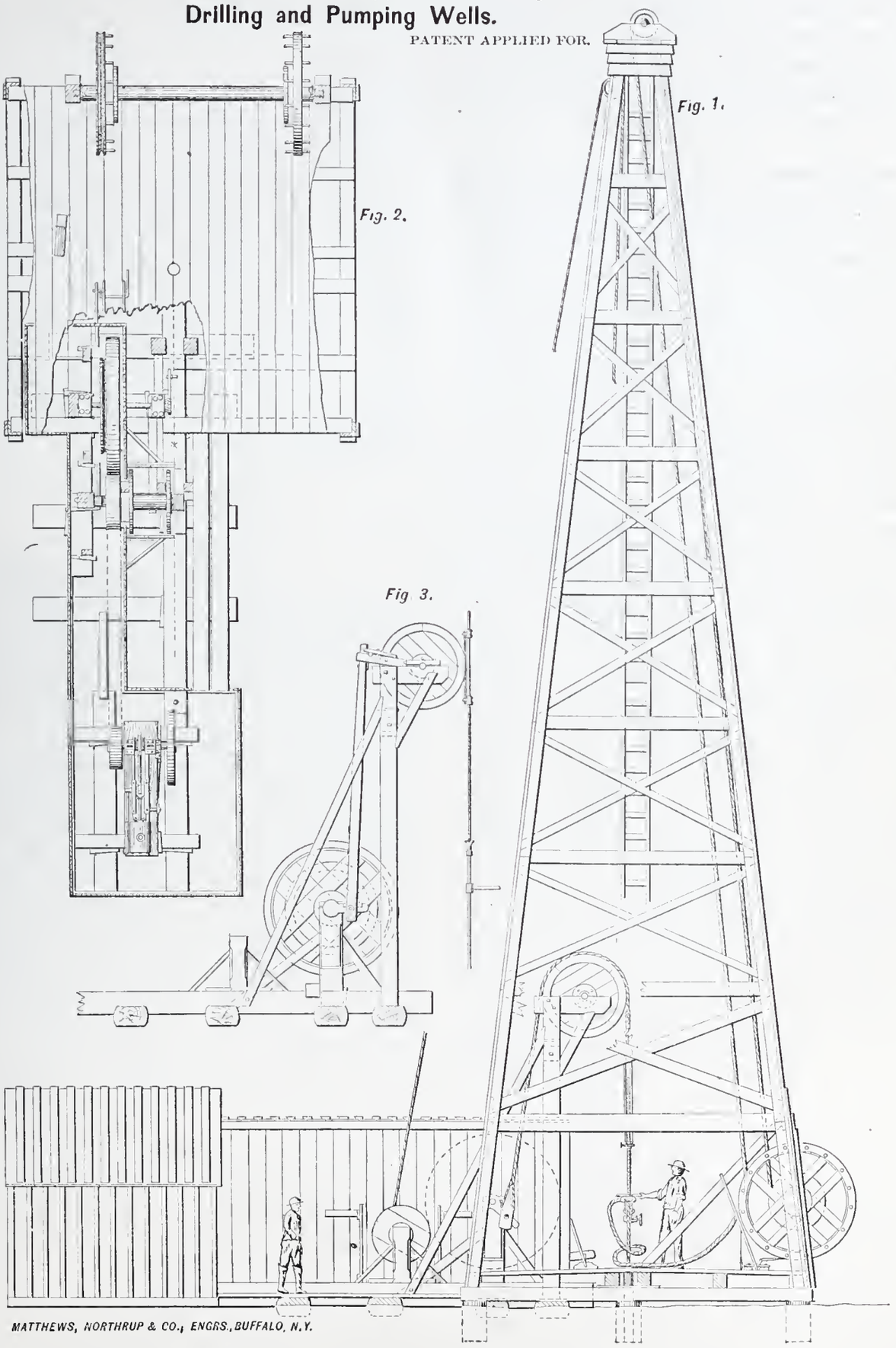
In the pumping apparatus, as shown by fig. 3, a slight addition is made, as a pitman is substituted for the short piece of cable and short arms are secured to the side of the wheel for the purpose of connecting said pitman. Around the wheel is fastened a wire rope, the ends of which are secured to adjusters through which the polish-rod passes, the length of stroke being regulated at the crank. When in use the downward movement of the crank winds up the end of the rope attached to the lower adjuster at the same time the end that is fastened to the upper adjuster is unwound, thereby raising the sucker-rods; on the upward movement of the crank the action on the rope is reversed, forcing the rods downward. The motion of the polish-rod is perpendicular, the oscillating movement that occurs when it is attached to the walking-beam being avoided.

The derrick, shown in fig. 1, is of the style now in general use, but Mr. Corbett has a new derrick already prepared in a strong and substantial manner, made in sections that can be used and taken down an indefinite number of times without loss of material and is easy of transportation. This derrick is intended for the oil region, but more especially to localities subject to high winds, as it presents very little surface for the wind to act upon. He also has plans of a drilling and pumping rig, which we hope soon to illustrate. The entire rig and machinery (except the boiler) is constructed on an area twenty-one feet in width by twenty-eight feet in length; these distances can be lessened should circumstances require it. This rig is constructed with an iron cog-wheel in place of the band-wheel. This is connected with a pinion on the engine shaft; the pinion is constructed with hard-wood teeth for the purpose of avoiding noise while running. The engine is turned around and sets in the derrick in such a position as not to interfere with the driller or his work. This method does away with the use of a belt. The construction of the band-wheel, bull-wheels and sand-reel is also Mr. Corbett's invention, but they being in such general use need no explanation regarding either construction or their peculiar advantages. In regard to the sand-pump reel, however, we will state that on a practical test a pump was drawn from the bottom of a two thousand-feet well in one minute, the engine running at regular speed. As many as five wells have been drilled with one reel without impairing its usefulness.

The apparatus, with cog-gearing and the drilling as illustrated, has received a practical test in

Corbett's New Process Apparatus or Rig for Drilling and Pumping Wells.

PATENT APPLIED FOR.



drilling a well on the East Branch, near Bradford, and gave entire satisfaction in every respect. The well was visited, while drilling, by the AGE and everything worked in the most satisfactory manner, giving promise of the greatest success.

For the benefit of those of our readers who do not fully understand the process of boring for oil, we will endeavor to give a more lucid explanation.

In fig. 1 is shown the derrick, in which is placed the bull-wheels on which the drilling cable is wound. Passing around one of the wheels is an iron band called the break, which is fastened to the derrick floor at one end and to an iron lever at the other. The driller by this arrangement has full control of the tools when lowering them into the well. One end of the drilling cable passes upward and over the crown-pulley on the top of the derrick, and to that end the drilling tools are attached. (These tools were illustrated and explained in our February number.) When the tools are lowered to the bottom of the well, the temper-screw is clamped on the drilling cable, and enough slack pulled down to allow the cable below the temper-screw to be freely turned, by which means the tools are also turned at the bottom of the well. The temper-screw is attached to a short piece of cable, which passes around a wheel about five feet in diameter (supported in the derrick by a sampson-post), and is fastened to a wooden block on the wrist-pin of the band-wheel shaft crank. On each revolution of the band-wheel the tools are raised and dropped about two feet, and as the tools weigh in the neighborhood of two thousand pounds, a very heavy blow is struck and rapid progress is made. The progress of the tools downward is controlled by the driller, who lets out the screw when necessary, by loosening a set screw in the lower part of the temper-screw frame. The engraving shows the temper-screw attached to the drilling cable and partly run out. When the screw is fully run out the cable is tightened up, the temper-screw detached, and the tools withdrawn from the well. This is done by means of a tug-rope, which passes around one of the bull-wheels and around the tug-pulley on the band-wheel; fig. 2 more fully shows the position of the wheels. The sand-pump is now lowered. This consists of a cylindrical tube having a valve at the bottom, and is attached to the sand-pump line, a portion of which is shown suspended on a pulley at the top of the derrick. This rope passes down the outside of the derrick and around the sand-pump reel, which is shown between the derrick and the engine-house. The object of the sand-pump is to remove the detritus or cuttings of the tools from the bottom of the well. The sand-pump reel is in connection with the band-wheel, runs by friction, and is controlled by means of a lever in the derrick. (See fig. 2 for its shape and position.) This operation of drilling and sand-pumping is continued until the well reaches the proper depth. In the small house to the left is the engine which drives the band-wheel; the shed extending from the engine-house into the derrick is called the belt-house and protects the belt which passes from the engine around the band-wheel. One grand feature of this important invention is the fact that it is not confined exclusively to its own appliances in drilling, but the ordinary wheels, walking-beam, etc., can be utilized on any of the improvements alluded to.

OLD VIRGINIA.

BY GRIZZLEY.

VOLCANO, W. VA., June 28, 1882.

AT present there is but little doing in this field. At White Oaks there is some excitement over what is termed "a find," which was made by Cuthbert & Carl, last month. They drilled a well to the depth of 1,750 feet, and shut it down, ostensibly to obtain leases. It is asserted by some that they found a valuable show and that it can be opened almost any time, and may prove to be as big as Cadwaladers' or any other man's. Producing in this part of the world is an up-hill business. Competition in refining and piping is dead, and sometimes after a man has carried a certificate of oil in his pockets for weeks he cannot find a buyer for it. Until the northern country, therefore, has become pretty well drained it will be impossible for us to do much in supplying the world with cheap oil. We believe, however, in a great future for this country and are sticking to it, like grim death to a defunct Indian.

The wells are very small and the oil obtained thus far is of the heavy species, though it is thought that by going deeper light specimens may be obtained.

A NEW-YORK paper asserts that thirty thousand lives have been lost by the explosive products of petroleum. Pennsylvania, which produces about all of this product, could show, perhaps, the greatest percentage of loss in this direction.

THE OIL SITUATION.

THE question of supply and demand, consumption and production, has become a matter of no particular interest to the trade at this writing. All attention is now given to the subject of storage for surplus stocks. An ocean of oil has been tapped — in the mind — and the world is destined, to all appearances, to become pretty thoroughly deluged with the liquid. It flows from the bowels of the earth at Cherry Grove as freely as the tide approaches the ocean shore. The field surpasses any ever previously discovered in the capacity of the wells to produce. An area of territory consisting of at least 2,000 square acres, upon a large portion of which it is not improbable a thousand-barrel well may be obtained by the sinking. One hundred and seventy wells drilling and all expecting at least the capacity named. We drop the quill and gasp for breath. Is the business doomed to be damned; or will the gods change the flow into an ebb and help the trade out of the terrible dilemma?

Only three months ago we labored hard to show the possibilities of production and consumption approaching the same angle, and everything connected with the producing interests at that time pointed in that direction. Everything then was promising. Calculations were made admitting a possible increase in Warren County of 10,000 barrels a day and here we are promised five times the amount. What shall be done with it? It is true the northern fields must decline in future, though the process will undoubtedly operate more slowly than some would desire, yet their fate is sealed, and, as a consequence, some room will be made for the enormous supply of Warren. But this does not answer the questions, "What shall be done with it?" and "What is to be the result upon the price of oil?" Forty-five thousand barrels may be considered a low estimate to put upon Cherry Grove's daily yield in the near future, which, added to the 70,000 barrels produced elsewhere, and we have a total of 115,000 barrels per diem, with grave possibilities of its being crowded still higher. This gives only about 47,000 barrels over and above the daily consumption of the world for the year of our Lord in which producers of crude now live. Forty-eight thousand a day for thirty days, or one million three hundred thousand barrels a month. At this rate for six months we should enter 1883 with nearly 40,000,000 barrels in stock and the price just wherever purchasers should feel inclined to place it. But there is always a bright view in every picture. We might go on and enlarge upon the possibilities and probabilities of that field until the hair of the head should start from its roots. After that were done it might be said, "How easy it is to be mistaken." Hosts of thousand-barrel gushers may be obtained there, and doubtless will be, but while the task is being accomplished large quantities of the liquid is destined to take the overland route toward the sea. There will be a general gush, followed by an awful rush for some place to put the stuff. The pipe lines, which are just now preparing largely to take care of the product, will be overtaxed, doubtless, and a resort to private tankage will result. After all, thousands of barrels will waste and hundreds of thousands from beneath will come forth and pass into hidden storage under lock and key, there to remain until the trumpet call of dollar oil is again heard in the land. At that time it is not improbable that 50,000,000 of barrels may be stored on the surface in the Oil Country, and will be as ineffective in depressing the market as were the thirty millions prior to the Cherry Grove outburst. Heavy showers do not always maintain a lengthy duration, and Cherry Grove's will probably be no exception to the rule. It seems destined to swell to enormous proportions, but the larger it becomes the more speedily will come the collapse, and over the ruins it has created will spring a much more healthy and prosperous industry.

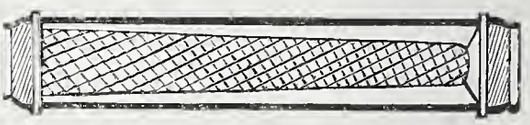
Meanwhile, prices must either be sustained through the efforts of capitalists, or they must recede as the production tide advances. Purchasers of oil at fifty cents a barrel have a similar amount in view as profit in all probability—if held a sufficient length of time, say one year. It cannot be possible that new fields of this character are to open monthly forevermore. There is and will be a limit to it, and all that producers can do under the circumstances is to step in out of the wet and wait till the shower is over, or go down and take a dive with the other gusher hunters of Cherry Grove. It seems more like a dream that this monster section has developed than a reality. It will revolutionize the business. Its depressing effects overcome, which they doubtless will be in time, and the great industry will again move on its grandeur. As stated above, it is not now a question of value as measured by the supply and demand standard, but rather by the disposition of capital to seek investment in a commodity whose intrinsic worth far exceeds its present cost, and whose source of supply is liable any day to ex-

haust materially. This is practically the condition of the trade to-day. It must be faced as it appears. It is well known that the Standard Refining Co. proposes absorbing all of this cheap product for which it can supply capacity. Others will follow suit, and for this reason prices may be tolerably well sustained in the region of fifty cents, though it would not be a surprising matter te see them go even higher.

Since writing the above some important developments have transpired—a record of which will be found elsewhere—demonstrated by the result as soon as the facts became known to the trade, as the market bounded as with one spring from 50½ cents to 58 cents a barrel. This occurred on Saturday the 8th inst., with the news that the well on 648 was probably a failure. To this was added a probable dry hole on 633, two small wells on 659, and a light well or dry hole on 671. All these locations are seen by reference to the maps on last pages. It cannot, of course, be stated with certainty that these wells are all as indicated, but enough is known to enable us to judge somewhat correctly, especially as regards 648. The others are questionable, though appearances are not favorable to large gushers, in which case they define the limits on the east side of the belt with considerable satisfaction. Therefore, Cherry Grove's existence promises to be extremely moderate as to duration, but it will most certainly prove to be the "loudest mouthed" patch ever discovered in any country. It is over four miles in length, by a little over half a mile in width, making 2½ square miles of producing territory, upon which the drill is being urged with great haste, that has somewhat changed the aspect and given rise to fresh courage. As formerly stated, stocks above ground have no particular weight upon the scale of prices while the latter remain below a dollar a barrel. It is generally the unknown quantity beneath the surface in any undefined region, that causes apprehension and alarm to the producing element. It has been so regarding the Cherry Grove deposit. The first three wells that punctured the sand caused a commotion that shook the trade like a leaf in the wind, and threatened the very existence, financially, of many otherwise good and substantial oil men. They poured out oil at the rate of more than a 1,000 barrels apiece, yea, nearly double that amount, and it begun to be believed that the jugular leading to an ocean of uncomfortable dimensions had been tapped, and that there would be no such possibility as limiting the daily yield were there sufficient facilities supplied for its reception. But the late reports from the field have been of a more modifying character so far as area of producing territory is concerned. Instead of a belt of some miles in diameter, and of uncertain length we find it dwindling to little more than half a mile in width with grave probabilities that 4 or 4½ miles in length will cover the extent in that direction. In this case the damaging effect that Cherry Grove has produced upon values can only be temporary. In fact, this is. The more speedily it is drilled, however, the more speedily will come the finale.

Capital will seek investment in oil at present prices when its possessors discern well-defined limits to the producing area. They do not care how much of the stuff is raised from any given space, so long as that space does not include whole counties. The number of millions of barrels that the belt as now defined will produce, can be quite accurately figured and with a remarkably enlarging demand, in all parts of the world a few millions of barrels are considered of small moment. This seems to be the feeling abroad at the present time. With Cherry Grove exhausted and Bradford and Allegany going downward, the hope of dollar oil would again spring up in every heart, and it would come with greater swiftness than people are willing to admit.

THE HAGGARTY SAND TRAP.



THE cuts represent the outside and inside view of a contrivance recently invented by Mr. John Haggarty, of Bradford, Pa., for use in pumping oil wells. It is made of wire as indicated, and occupies a position in the tubing between the working barrel and the perforated pipe. Over the wire sieve, as it might be termed, is drawn a covering of coarse canvas, through which the fluid from the well must pass before reaching the valves in the working barrel. By the process the oil is thoroughly strained, and all sand or grit prevented from coming in contact with the valves, thereby making a large saving in the use of oil cups, and trouble of drawing rods. It is coming into general use, and is of much value where wells have to be pumped.

THE MURRAYSVILLE OIL WELL.

FROM Greensburg a short time ago, that is, within ten days, the following message was either sent to the Pittsburgh *Telegraph*, or else written by a reporter, without a fear of the Devil before his eyes. It reads thus: "The new oil well at Murraysville is down to first sand, and operations have been stopped. No one can account satisfactorily for this action. When the drill reached the sand at a depth of twelve hundred feet the tools were taken out and the drillers pulled their overalls about them and "silently stole away." No one could get any information from them, except that they were going home to Bradford. It will be remembered that a parallel case to this can be found in the big six-hundred-six which was struck at Warren a short time ago. Whether the result will be the same or not cannot be discovered. The well is owned by Pugh, Emerson & Co., of Bradford, old oil operators. They control considerable territory, and other parties are now scouring the country trying to get leases. The well is located about a quarter of a mile from the old gas well. The people living in the neighborhood of the mysterious hole are greatly excited over the prospective strike." "Big six-hundred-six" sounds very much like the utterance of a man just ready to go out and shoot somebody. In other words, the fellow is a crank. This is the second "big six-hundred-six" we have heard about lately, one of them being as far away as West Virginia. The Greensburg country is known to be of the strictly lubricating character, and the idea of getting a 2000 barrel well of heavy lubricating oil is simply horrible.

THE WARREN FIELD.

IT seems to be almost a settled fact that the field is to be circumscribed in a very short time. The well on lot 648, owned by the Whale Oil Company, is below the sand level without finding anything worthy of note. A sand rock of peculiar texture was discovered at the place where the gushers obtained their supply of oil, but it was hopelessly dry. The rock was found to be made up of hard shells of rather white sandstone interlaid with streaks of slate and sand mixed. This certainly sets a seal to the territory on the western edge of the belt and narrows down the limits, as regards diameter, to about half a mile. This, with four miles in length, gives about two square miles of producing territory, a small patch compared with the expectations of the trade. It is true this area may, and in all probability will, be enlarged somewhat, especially along the eastern edge, but the result of the Anchor Oil Company's well on lot 659, which at best is only small, fully attests the strength of the theory that the very rich territory does not extend to any great distance beyond the half-mile mark, taking 646 as the centre.

It is now quite evident that the first three wells drilled in the field were centrally located with the bulk of the good territory lying east of a 45° line, though for a season it was supposed to be west.

The Goldsborough Well, on lot 672, located near the centre of the lot, is not as large as its forerunners and therefore indicates a possible determination of the course southwestward, in the immediate neighborhood. This well is now, July 11th, doing about 400 barrels a day. It has been claimed for it that it has not been drilled a sufficient depth into the rock to enable it to make the proper exhibition. However this may be, it is not probable that many miles of territory of this class extends beyond Goldsborough to the southwest.

On Warrant 5,211, as will be seen by the new map which appears on the last page, a well is now drilling and is supposed to have reached the proper level for obtaining oil, if it existed there.

The well is owned by Tionesta parties and Capt. Peter Grace, one of the 646 pioneers, who has three-sixteenths of it. It is well lined with the Cherry Grove deposit, on a 45° range. The fate of this well would seem even now to be pretty well sealed. It is situated in the midst of a country on three sides of which dry holes in considerable number abound.

What is to come of the wild-cats now drilling in Watson Township, on lots 543 and 452, is a matter for the drill to determine. Sand rock is known to exist in that latitude, but it is close and hard, and wherever punctured has been found entirely devoid of oil. One, the Toles, is said to be down and dry.

Considerable interest centres in the field northeast of the Mahoopany Well, on lot 611. Territory in the vicinity has sold as high as $600 bonus and three-eighths royalty. But the fact that the Mahoopany stopped flowing about the 6th inst. caused some apprehensions of uncertain territory. There was something wrong with the well, for it was given to an AGE representative that the well had received a heavy shot on the night following its sudden collapse. This may be true and it may not, but circumstances

would seem to warrant the opinion that the report was correct.

The new wells are not as prolific as formerly. Their production on the 10th inst. was given about as follows:

	BBLS.
646, Union Oil Co. Mystery,	600
647, Cadwalader, No. 2,	800
635, " " 1,	1,150
635, A. Sherdemantle,	1,000
635, Reed & Brenneman,	400
619, Capt. Murphy, No 1,	800
619, " " 2,	600
	4,350

Nickle & Co., on lot 635, is on top of sand, as a few others on 619 and one on 646, also 647.

The Green mystery on 671 remains quiet. It is impossible to determine its true character. It may not be down to the proper level. It would seem from its proximity to the Goldsborough line that it ought to produce oil in some degree, though it is hardly possible for it to be large, owing to the fact that it is "lined" no better than the Anchor's Well on 659.

Notwithstanding these results, the field ought to have a big yield in the immediate future. If all the wells now drilling on the territory supposed to be rich, together with those outside portions that may not be quite so prolific, are put into the sand and set in motion as quickly as possible, there is no telling to what pitch they could run the yield for a short period. The following table shows the amount of territory as at present developed, including, as above indicated, all that may be considered medium light and rich:

Lot.	Acres.	Lot.	Acres.
646	180	620	100
635	160	634	50
636	160	647	100
659	90	658	180
645	100	657	60
637	60	672	120
618	120	671	40
617	50	619	180
611	180	590	60
612	110	589	50
610	120		
		Total,	2,270

With five acres to each well, this would give us a total of 465 wells in the district, one half of which are now under way and will be completed in sixty days. It will therefore take less than six months to nearly complete the list, unless the field is materially enlarged.

There is a little salt water troubling nearly all the wells. This is said to come from second sand.

THE Stockton, New-York, well is a failure at 2,100 feet. There were no more indications of oil in the well than there are in the moon.

THE ALLEGANY FIELD.

TABLE SHOWING THE PROGRESS OF DEVELOPMENTS AND PRODUCTION OF THE ALLEGANY (N. Y.) FIELD.

MONTH.	No. of wells completed.	Dry.	Production. Bbls.	Average per well.	Daily Production of Field. Bbls.	Drilling.	Rigs.	Stocks in wooden tanks. Bbls.	Stocks in Iron tanks. Bbls.
Total, 1880	8	42	76	9½	76	4	6	. . .	. . .
Jan'y, '81,	4	2	18	9	94	4	5	. . .	. . .
February	4	1	24	6	112	4	8	. . .	. . .
March .	5	2	60	12	162	4	7	. . .	. . .
April . .	3	1	20	10	170	5	6	. . .	. . .
May . .	4	1	48	12	212	20	21	. . .	. . .
June . .	14	8	130	9¼	327	24	35	. . .	. . .
July . .	22	5	275	12½	588	47	57	. . .	. . .
August .	53	17	586	11	1080	62	68	. . .	. . .
September	63	11	910	14½	1740	105	118	. . .	. . .
October .	96	5	1432	15	2896	164	198	38000	108891
November	154	10	2732	17½	5180	155	200	84666	142216
December	196	2	5115	26 1/10	8937	187	204	180200	169250
Jan. 31, '82,	162	2	3914	24 1/6	11123	191	209	270860	243147
Feb. 28th	189	4	4154	21.97	13200	212	201	373460	258247
March 31st	216	2	5580	25.83	16000	215	221	374490	359347
April 30th	257	6	6356	24¾	20760	226	230	400000	417347
May . .	265	7	5992	22⅝	22438	179	191	440000	542347
June . .	163	11	3605	12	22220	94	153	475000	550000

IN this field there is but little change since last month. The 163 wells completed during June just about sustained the daily yield, though the figures show a slight falling off. Of course, this decline has only commenced unless the operators take a fresh start, since unfavorable reports have arose out of Cherry Grove, and resume the work of drilling. Many of them concluded that they must cease here and proceed to aid in demolishing that prolific spot. Since Saturday last, the 8th, however, some have changed their minds and have rescinded their orders for shipment of material. Those undoubtedly who stick to Allegany will come out ahead. There is a large inquiry even now, June 12, for producing property. The wells seem to maintain their regular yield to a remarkable extent. Gauges of a number of properties taken by AGE representatives show a very moderate decline which, from the character of the rock, is a matter of some surprise. Drilling has been nearly entirely suspended though preparations are making at the present time for starting a score or more that were intended to lie idle for a few months. No oil is wasting at the present time.

COL. ELLSWORTH, an old Pithole operator, at present commanding the hotel force at Erie, Pa., visited Warren on the 8th inst. He is owner of a warrant containing a 1,000 acres or more, about five miles in advance of the Goldsborough Well on Lot 672. A 45° line cuts it squarely.

THE PETROLEUM MYSTERY IN INDIA.

THE *Drug Reporter* says that the rejection of several cargoes of American petroleum by the government officials of British India is of serious import to the petroleum trade. Thus far the cause of the trouble remains a mystery. If, as we understand, the oil is rejected before the vessels have discharged cargo, the climate can certainly have nothing to do with the matter, and, being at sea level, there can be no difference of barometrical pressure to be taken into consideration. The test for India is the same as that for England, and we are assured by the inspectors here that oil which has passed the required test in England has been rejected in India. It is a matter of sufficient importance to induce both exporters and inspectors to use all possible means to ascertain the cause of the trouble and apply the remedy. It is thought by some that it may be a move on the part of the goverment to force shipments of the Indian oil to England, instead of having them go from here direct, thus giving her larger control of the carrying trade. A few days' time will probably furnish a clue which may lead to a solution of the mystery.

THE CALIFORNIA OIL FIELDS.

(REGULAR COR. OF THE AGE.)

THE total product of the various localities where oil is being obtained on the Pacific coast has never exceeded 300 barrels per day to present date, July 1st, 1882. There is now, however, every prospect of a decided increase of production. It seems probable that by January 1st, 1883, there will be a daily output of at least 600 barrels. The prediction is based upon the fact that four wells are now in the sand in the Pico district, near Newhall (35 miles north of Los Angeles), which are full of oil and flowing occasionally and will doubtless make good producers. There are four rigs ready to drill in the same vicinity, and a dozen more contemplated. In this district there has never been a well drilled that has not produced oil in paying quantities, and as the California operators have now learned something of the science of "bouncing the drill," they seem desirous of emulating the example of their brethren, the "noble producers" of Pennsylvania, and enjoy the sweets of fifty cent oil.

During the past year the demand for crude oil has been greater than the supply, at from $2.50 to $3.00 per barrel in San Francisco (as to quality), but this state of affairs is not likely to exist much longer.

There are two wild-cat wells drilling, one about two miles from Pico, on the Wiley Farm, 500 feet deep, and one three miles from Gilroy, seventy-five miles south of San Francisco, in the Santa Cruz district. This well is 300 feet deep.

There will doubtless be a steady increase in the production of crude oil on the Pacific coast, but the local trade of the coast will absorb it all for several years to come.

There are no stocks of oil, either crude or refined, here. Ten thousand barrels would include everything in the shape of petroleum in the State. Refined is dull and declining in price—Standard White selling for 16 cents in cases and 13 cents in patent barrels. Consumption is increasing steadily, about 5,000,000 (five million) gallons per year being required of refined, and 1,500,000 (one million five hundred thousand) of crude. This demand for crude has sprung up entirely within the last eighteen months, and at the present rate of increase it will be greater than the refined trade within the next two years.

SAN FRANCISCO, July 1st, 1882. *

EFFECTS OF DEVELOPMENTS UPON PRICES.

THE Whale Oil Co.'s Well on lot 648, Cherry Grove, was said to have two plugs in it. On Friday afternoon, the 7th inst., it was reported that the well was a failure, and the effect upon the market was immediately felt. The shorts who had been offering oil all the forenoon at from 50½ to ⅞, became alarmed just before the close of "Change," and began to draw out. When the din had ceased, the bulls, who had pressed prices upwards two cents, were feeling delightfully, while their opponents were pale as ghosts with fright. When the market opened on the morning of the 8th there were few sellers at 3⅛, and under an enormous demand prices were elevated to 58½. This shows how susceptible the market is of the slightest change in the producing field. The most insignificant move in the direction of a depreciated production causes a very uneasy feeling to those who have sold more than they possess. This is a promising feature of the trade. It indicates the increasing magnitude of the universal demand for the product, and the probability, or at least the possibility, of this demand some day over-reaching the supply, in which case prices would rule according to the willingness of individual holders to sell.

WHERE OUR OIL GOES TO.

THE following table shows a portion of the numerous countries to which our product is taken, with comparisons with last year's shipments to same. But few ports receive less oil this year than last, and the great majority receive much larger quantities.

REFINED.

COUNTRIES.	1882. *Gallons.*	SAME TIME 1881. *Gallons.*
Africa	1,307,130	1,273,944
Algiers	261,950	. . . . .
Austria	3,163,438	4,123,204
Belgium	6,610,195	11,556,799
Brazil	2,009,812	2,657,592
British East Indies	15,179,550	4,069,100
British Guiana	273,592	133,020
British West Indies	615,876	739,477
Canary Islands	58,258	12,550
Chili	393,450	207,500
China	10,943,950	3,957,820
Denmark	5,126,409	3,544,539
Dutch East Indies	13,126,920	9,808,640
Dutch West Indies	40,049	72,037
England	23,470,908	17,953,914
Egypt	1,159,600	1,226,010
Germany	47,208,250	34,732,115
Gibraltar	298,430	1,495,384
Greece	379,300	609,207
Hawaiian Islands	55,000	45,650
Hayti, etc.	238,141	272,485
Ireland	2,901,451	3,342,889
Japan	7,446,840	4,834,520
Mexico	519,928	505,662
Malta	158,150	409,270
Netherlands	6,682,851	6,930,108
North America	188,738	138,225
Norway and Sweden	4,789,648	4,163,751
Peru	215,000	116,600
Porto Rico	427,701	138,964
Philippine Islands	503,980	286,000
Portugal	807,007	1,450,818
Reunion	77,000	35,660
Russia	1,371,122	739,665
Scotland	. . . . .	91,250
Siam	163,500	. . . . .
Spain	4,000	887,342
Turkey	2,332,343	3,833,623
United States of Columbia	91,750	64,175
Uruguay	834,950	774,790
Venezuela	246,276	274,057
Total	167,200,020	132,752,088

THE WAR.

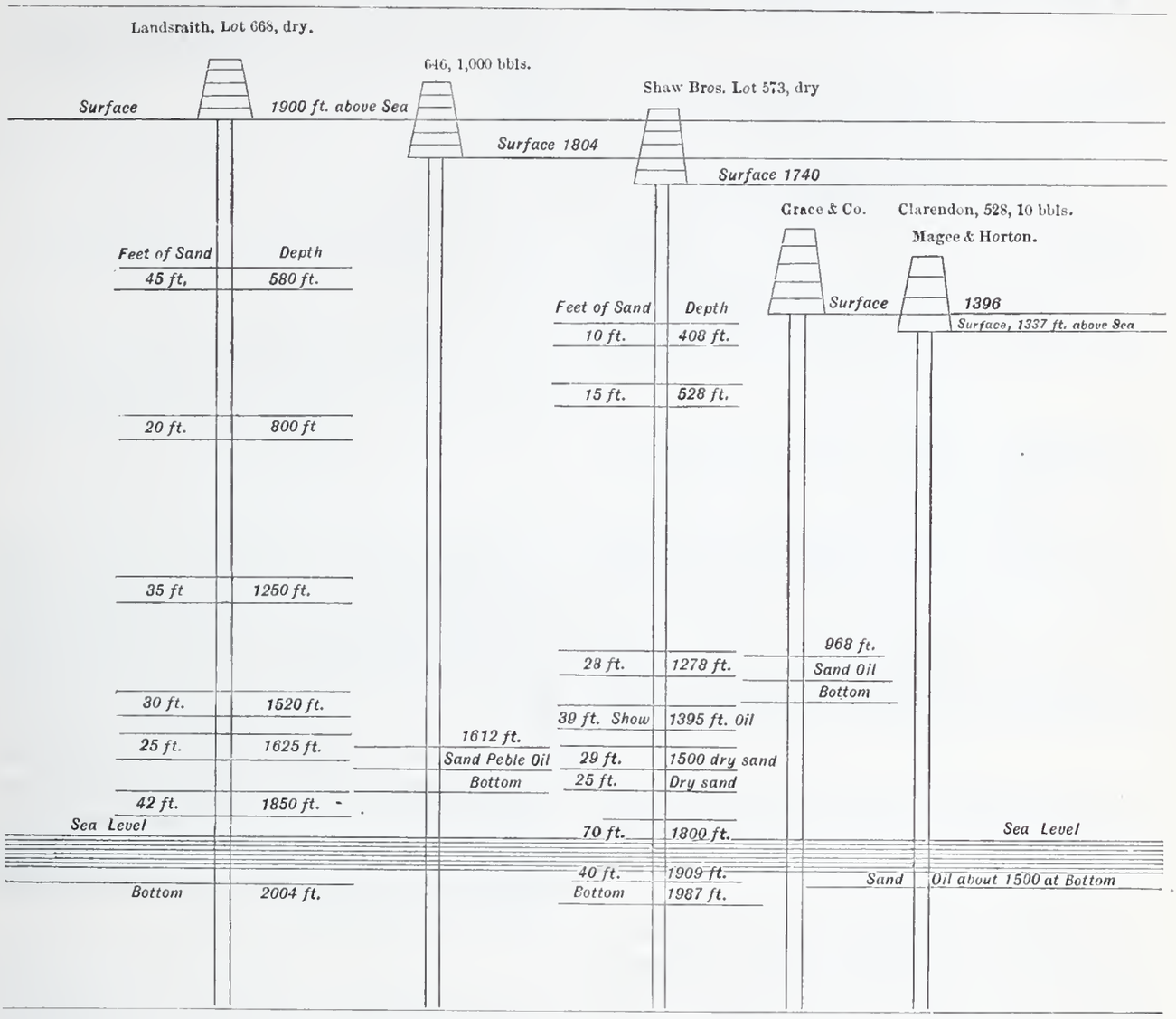
WAR has once more broke the silence of Europe. Its unpleasant sensation has been felt around the entire globe. There is something in the announcement that causes the lover of "peace and good will toward men" to feel sad, however distant he may be removed from the disturbing scene. The difficulty, furthermore, which led to the bombardment of the Alexandrian forts were, indeed, scarcely worthy the name of *casus belli*. The world just now seems to be well filled with fanatics, and in Egypt they are not wanting by any means. This trouble between Egypt and England extends far beyond the mere question of Egyptian finance. It is one more outburst of the Mohammedan volcano, which has had its crater jaws extended for centuries to swallow Christian influences in the Empire of Islamism. The fact that the rebel Pasha, in his retreat from the burning City of Alexandria, stopped long enough to butcher thousands of innocent people who were not inclined to the worship of Allah, is evidence sufficient that the fight between England and Egypt is to be more than a mere contest for the right to dictate in the conduct of the government. This is the old Mohammed system of warfare, and unless a powerful force is dispatched to Egypt by which Arabi Pasha and his co-religionist, the new prophet, are taken and strung high in air in the presence of their followers, an outbreak, the consequences of which may extend around the world, is not among the impossibilities. England has been right in this instance, and every civilized nation accords with this view of the case. She was wrong, however, in not being prepared with a land force to *corral* that rascal Pasha and burn him, with his maddened forces, within the precincts of the doomed city.

Alexandria, the great city of more than two thousand years, is again destroyed—a great city of 300,000 or more souls has been almost entirely leveled to the earth as a result of an agitation very similar to the movements that have characterized the nation from its earliest record. The people are not capable of advancement with the more intelligent classes of Europe, and there is an eternal hostility existing that eventually must result in the total extinguishment of pagan ideas. When America learns that hundreds of her people have been made a sacrifice for Egyptian revenge, what will she do? We have this much to offer: If they will furnish us ships, we will supply them with oil enough to burn up all the pagans of the earth, and still have a fair production left at Cherry Grove.

THEY have a small pumping well at Nile, N. Y., two miles south of Friendship. It may be termed a *scratch*, as it is pretty well *encircled* by dry holes.

MACHINERY is frequently hauled 100 miles by team in order to hasten operations at Cherry Grove. Owing to the inability of the railroads to move and handle the material, teamsters are in great demand. They can be seen carting boilers and engines and other stuff alongside of the railroads from all directions, and are exceedingly happy, as they receive all they ask and no questions.

ENGRAVING SHOWING THE CHERRY GROVE WELL RECORDS.



IT will be seen, the above engraving has been changed somewhat for this issue. By some unexplained cause the record of the Landsraith duster and that of Shaw Bros., on lot 573, appeared last month exactly the same — one was a perfect duplicate of the other. We, therefore, considered it of sufficient importance to re-engrave the Landsraith record, and it will be found correct. Mr. L. considers the rock at 1625 the same as that of 646.

EXTINGUISHING OIL FIRES.

IT is remarkable how easily an oil fire is extinguished in the minds of many who have not seen a 1000 barrel well burning. During the burning of the Cadwalader Well hundreds of men had schemes before seeing the fire to extinguish it in a few hours at most. One man would steam it to death, another would squeeze its life out, another would drown it, another would smother it with straw and feathers, another would cast up earth-works and take it by main strength, another would dig a hole in the ground and cut off the supply where it would do the most good, another would roll a big log on to it and crush it, another would blow its brains out by glycerine, another would blind it by the use of carbolic acid gas, and so on to the 403d, but short time will not permit their mention. After summing them all up, there was but one way, and that was to apply pipes as in the manner indicated by the cut on another page, by which the fluid could be removed to a safe distance.

GEO. H. VANVLECK is reported to have obtained a good lubricating oil well during the month of June in the Illinois field.

HEAVY teaming in the Cherry Grove section costs something; twenty dollars a day is what some of the knights demand for services.

THE PETROLEUM AGE.

DEVOTED TO THE

INTERESTS OF THE PETROLEUM TRADE.

PUBLISHED MONTHLY AT

BRADFORD, PA.,

BY THE AGE PUBLISHING COMPANY.

Subscripton price, ... $5 a year.
Single copies, ... 50c. a copy.
Sent, post-paid, to any part of the world.

W. J. McCULLAGH,
Editor.

THE AGE is full of invention.

LET us have 75 cent oil again and give the whole world a surprise.

SOME think it begins to look like 65 or 75 thousand barrels a day from Warren County alone.

PHILADELPHIA has an Oil Exchange in full running order. The Quaker City was a little slow in this matter.

IT is interesting to know what effect the cheap product of Cherry Grove is destined to have upon petroleum commerce abroad.

REED & BRENNEMAN disposed of six locations on their 30 acre piece of lot 635, Cherry Grove, at one-half the oil royalty and a $1,000 bonus. Cheap enough.

Mr. W. A. MOSSMAN is connected with THE PETROLEUM AGE in a business capacity, as also as an owner, having purchased the interest of A. J. Carr, in May last.

PENNSYLVANIA wants a more stringent law regulating the sale of refined oil than it now possesses. The 110° flash test clause is too moderate in its requirements.

A GENTLEMAN of good *moral* character and a Stalwart producer visited the Mahoopany Well on the 7th inst. and pronounced her no greater than a 300-barreler. Was he gassing?

THE engraving in this issue, showing clearly the nature of the contrivance which "removed" the casing head at the Cadwalader burning well, will be viewed with interest. It has not yet been patented.

THE daily production increased a little in June but not so rapidly as was anticipated. It looks now as if it would be very difficult to increase the yield to 100,000 barrels a day and maintain it a week.

IN attempting to discuss the problem of Cherry Groves' probable production, a man incurs a task equal to that incurred in guessing the probable outcome of the deliberations of a Venango, Pa., County jury.

IT is remarkable what pluck and a little cash will accomplish in the oil market. The man who has money to invest could not find a more convenient opportunity, were he to travel the world over, than in taking in 50 cent oil.

IF Cherry Grove wells on the belt come in as large as those now producing, 50,000 barrels a day would be a moderate estimate to place upon the probable daily yield. As it is, however, the trade is yet in the dark as to that very important point.

A RULE of proportion:—If the Pipe Lines are just able, and no more, to take care of Warren production at 12,000 barrels a day, how much will they take care of when all the wells now drilling are producing at full head, and how much will be wasted?

THE question of storage begins to agitate the minds of the producing community to an alarming extent. It would seem an utter impossibility for the Lines to take care of the product of Cherry Grove, especially if it amounts to one-half of what some are ascribing to it in advance.

Mr. JOHN HAGGERTY has invented an apparatus for preserving valve cups, that must prove of great value to the oil producers of the north especially. It strains the liquid before entering the valve chambers, thereby preventing the approach of sand or grit. Read the description elsewhere.

Mr. C. N. PAYNE was elected President of the new Oil Exchange organization just effected at Warren, Pa. Mr. Payne is one of the successful speculators of which the country boasts. He is also a large producer. The Warren Exchange goes out into the world in search of business with a flourish of shillalahs, but will it stay? It possesses men of the best stamp, but it requires business to sustain an Oil Exchange.

It is a caution how quickly the most backward and reserved of the producing fraternity become exercised in spirit on gazing for a few moments at one of the big Cherry Grove spouters. They go for the first land leaser, who may hove in sight, with a greed created only by an oil fever of the most pronounced type.

All that holders of oil and wells need now is plenty of pluck and stick-to-it-ive-ness. These win all the time, and they will not fail in this instance. In six months from this date there may be those who will wish to avoid the charge of paying half the oil and $5,000 bonus for an 8 x 10 location in Cherry Grove.

There is certainly some consolation in the fact that old wells in the Bradford and Allegany districts can yet be disposed of, though prices range somewhat on the junk scale. The average well of the Bradford field now brings less than $1,000 at private sale. The man who invests even at this price must have some faith abiding in him of the future welfare of the field.

It would be making a very moderate estimate perhaps to put the number of applicants for fame (and money) in extinguishing the Cadwalader fire at 306. Of these, 302 had plans by which they proposed to proceed with the work, differing entirely with one another. All, however, had the same object in view and were ready before seeing the fire to blow it out like snuffing a candle.

The new State law which goes into effect about the first of August regulating the sale of "Kerosene" in the State of New-York, should have a very salutary effect upon the use of the article, thereby preventing explosions. A neglect of an officer or agent can thereafter be the only reason why an explosion should occur. Impure or adulterated oils only will explode under any ordinary circumstances.

In this issue we present cuts with description of the Corbet Patent Drilling arrangements—derrick, wheels, etc. It will be seen by careful observation that Mr. Corbet, who is a resident of Bradford, is a genius of no limited dimensions. The contrivance is unique and simplifies the work of drilling very much. It is expected after a few further demonstrations, and making the necessary improvements on the plans already nearly perfected, that the scheme will be adopted by the oil trade as the easiest and quickest yet devised for sinking oil wells.

The question of extinguishing fire at burning wells has agitated the minds of all producers since the devastation at the Cadwalader Well. A plan by which the oil can be removed from the casing beneath the derrick floor has been adopted already by a few. It is undoubtedly feasible. A gate valve is placed in the casing above a cross T where the fluid can be drawn off through separate pipes.

Two men will leave the same Cherry Grove Well at the same time, going in opposite directions, and will make reports as opposite in character as were their directions on starting. Why this is so is not easily explained, except on the basis of prejudice. One is desirous that the well should have a certain standing, and he works himself up to the belief that his view is correct, while the other feels interested the other way, and expresses himself accordingly.

The man who can muster sufficient courage to drill a well in the old fields where at best only a ten-barrel well can be expected, after gazing at Cherry Grove gushers, should go "thundering down the ages" as a "patriot and Christian" of the most distinguished character. Let us see. Ten barrels a day give a total in six months of about 1,800 barrels, less than one day's yield of some of the wells in the new district. One day against six months in producing is certainly putting things largely in favor of the lucky prospector of the Warren County Wilderness. Let the drill pause everywhere else.

HOW CHERRY GROVE LOOKS TO THE AGE.

It is quite evident that the view taken of the Warren or Cherry Grove section last month is the correct one—that the trade was liable to largely overestimate the probable yield. During the first few days of July it certainly appeared more promising however than at any other time, and it looked as if seventy-five or a hundred thousand barrels a day would be a small estimate for the output in the immediate future. How is it now—July 14th? The following table of gauges taken of thirteen wells for ten hours of Thursday will indicate to some extent what the

future of the section is to be. The gauge is figured as for one day.

WELL.	PRODUCTION.	WELL.	PRODUCTION.
Mystery,	646–650	Union Oil Co.,	634–720
Anchor, 1 lot,	635–1150	Clark & Goldsboro,	635–1160
A. Sheidemantle,	635–870	Reid & B., lot,	635–386
Cramer,	635–1300	Murphy, Nos. 1 & 3,	619–1460
Mahoopany No. 5,	611–328	Anchor's lot,	647–790
Anchor No. 5,	647–1140	Goldsboro,	672–430
Nickle Oil Co.,	635–940		
			11316
Average,			860

Of course, this does not represent the actual production of the field, only at the hour of gauging, as new wells are daily touching sand on lots 635, 619 and elsewhere, by which the figures are always subject to change. This, however, shows how largely the trade can overestimate big flowing wells. The large wells are constantly declining, and the strictly fresh are kept up only by the severest agitation. The Brenneman Well, lot 655, and the Mahoopany, lot 611, both stop flowing occasionally, requiring a *revival* for a new lease of life.

On lot 590, the Roth and Hayes Well or Mahoopany No. 2, was at top of the sand on Thursday, 13th, and was to be opened on Friday. It should make a fair Cherry Grove well but cannot be expected to hold at a big rate any great length of time. It is evident the extension to the North East will not continue far beyond this point. The good territory, however, may spread a little at the northwest, as is usually the case in all oil fields; the sand rock narrows at the southwest. At this latter extremity it is quite difficult to determine what may be the result, or how far south of Goldsboro, on 672, the prolific belt may extend. Goldsboro's Well is unquestionably a good one. It had not yet been drilled to the proper depth. As for Green, on 671, this is a complete mystery. It is guarded and shut down. A 250 tank is up and an inch pipe connects the tank with the well. Whether it flows oil, gas, or any other fluid through this pipe is known only to the owner and his *gens d'armes*. The well was visited on Thursday evening by the AGE and this was its condition. There was a pretty strong smell of gas in the woods near it.

From all, therefore, that can be gathered the field is by no means as great a bug bear to the trade as was anticipated. In fact, it now appears as if it would inure to its great benefit. It is true it will put out a large quantity of oil, but this will pass into storage vaults and become as other stocks whose effects upon the market cannot and will not be felt at prices below one dollar a barrel. And, while Cherry Grove is being exhausted, Bradford and Allegany are loosing their grip upon the affections of the unterrified driller, and the consequence is a big drop is transpiring in the daily yield of these. So, when Cherry Grove has run itself to death, in four or six months, the people will return, it is presumed, to resume operations on the outskirts of these deserted fields, and all the oil that can be produced from any or either of them, will perhaps, be required, to satisfy the wants of trade. There would seem but little therefore, to discourage the producer or drive him from a straight-forward course. The future is still bright.

WHAT PEOPLE SAY.

THE PETROLEUM AGE, with its new cover and attractive pages, is winning its way among the oil trade, and is a deserved success. In its current issue, besides its statistical and general information, it has an elegant colored map of the developments in the Warren field.—*Oil and Drug News.*

Mr. B. DAVIS WASHBURN, of Bradford, Pa., has been in this city for several days on business for THE PETROLEUM AGE, of which he is the traveling representative. Mr. Washburn is a very agreeable gentleman, whose visits are as welcome as those of the excellent publication he represents.—*Oil, Paint and Drug Reporter.*

WE are just in receipt of the latest edition of PETROLEUM AGE, published at Bradford, Pa. It appears in the usual form of a monthly magazine, handsome in typography, profuse in information, and reliable in its statistics. The publishers are men of long experience as oil reporters.

NEW-YORK AND BALTIMORE EXPORTS.

THE total exports of petroleum and petroleum products from the port of New-York, in gallons, from January 1 to June 30, 1882, as compared with those for the same period in 1881, were as follows:

	1882.	1881.
Crude,	16,497,794	17,708,080
Refined,	187,399,531	141,865,817
Naphtha,	5,196,560	6,433,830
Residuum,	2,066,184	2,156,770
Total,	211,160,069	168,164,497
Baltimore,	6,148,881	7,230,340

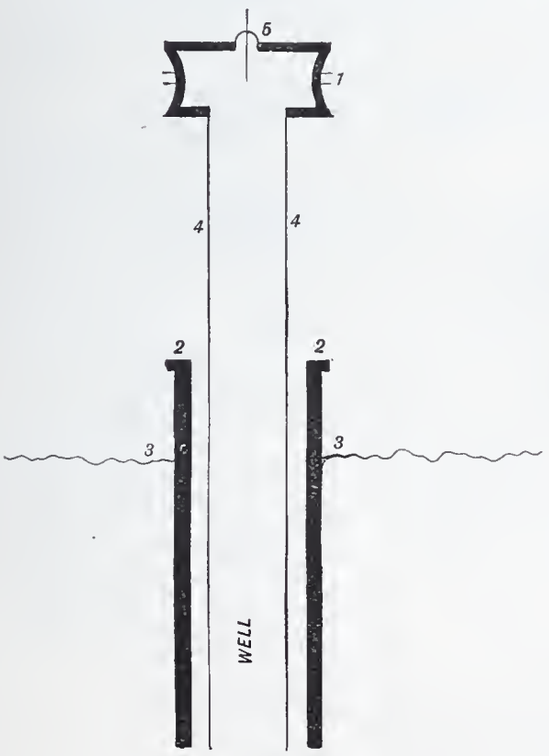
THE effects of the iron workers' strike at Pittsburgh is very damaging to the interests of the oil trade, as it prevents supply men from filling orders promptly. Shoot strikers.

STORAGE AND PIPE LINES.

THE United Pipe Line has made a contract for the erection of 750,000 barrels of iron tankage at Warren and is erecting one of the largest pump stations in its possession at Vandergift City, a mile and a half southwest of Garfield. It is also stated that the McCalmont Oil Co. is about to construct 25 or 30 more tanks. The Union is also building, and with these facilities, together with what all lines will be able to ship out of the region by rail, the producers should feel considerably encouraged over the fair prospect of marketing their product. They will keep ahead of the Lines, however, it doesn't make a cent odds how rapidly the latter move. They can drill wells faster than wooden tank men can furnish material necessary to start the wells flowing, and were it not for this, the production of the field would be much larger than it is to-day.

"VIC" GRETTER'S CONTRIVANCE FOR BLOWING OFF A CASING-HEAD WHILE THE WELL IS ON FIRE.

Figure 2.—THE WELL AND FITTINGS.

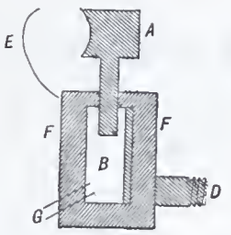


EXPLANATIONS TO FIGURE 2.

1—Casing-head.
2–2—Head or end of drive-pipe.
3–3—Surface of ground.
4–4—The 5⅝ casing extending into well.
5—Casing-cap, where a small aperture permitted oil and gas to escape.

Two 2-inch holes are pointed out in the hollow sides of the casing-head, where the main portion of the oil escaped.

Figure 1.—DIMINUTIVE CANNON.

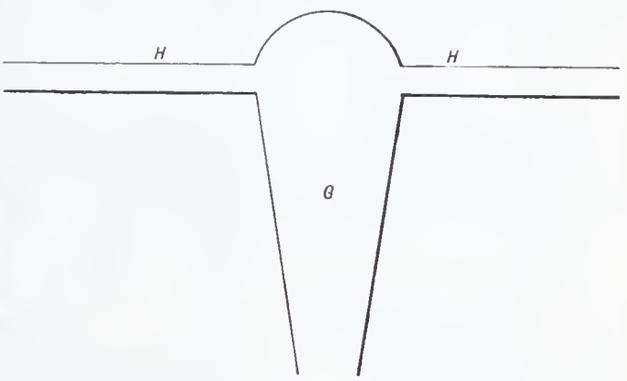


EXPLANATIONS TO FIGURE 1.

F–F—Piece of round cast iron 8-in. long.
B—Chamber for explosive.
G—Hole for fuse.
D—Short arm, with thread on end to fit 2-inch pipe.
A—Projectile, or iron plug, with head driven out by explosion.
E—Small arm to aid in holding contrivance against casing.

Two inch pipe was attached to the arm D for a safe distance from the fire when the contrivance was shoved to position, setting on the head of the drive-pipe, as indicated by 2–2 in Fig. 2.

Figure 3.—MACHINE FOR EXTINGUISHING FLAMES OF THE BURNING WELL.



G—Piece of 5⅝ casing, funnel-shaped.
H–H—Arms of 3-inch pipe, by which the article was carried until the point below came directly over the casing in the well when it was dropped in and the fluid immediately passed out at the arms.

JUNE SALES.

FOLLOWING is a summary of the sales of oil at the Bradford, Oil City, Pittsburgh and New-York Oil Exchanges during the month of June. Nothing less than 1,000 barrel certificate ever sold; each barrel represents forty-two gallons:

	BRADFORD.	PITTSBURGH.	OIL CITY.	NEW-YORK.
January, . .	23,885,000	11,441,000	27,163,000	
February, .	19,412,000	9,153,000	22,207,000	
March, . . .	27,467,000	13,208,000	29,448,000	
April, . . .	22,245,000	8,325,000	19,171,000	15,000,000
May, . . .	39,777,000	21,814,000	38,402,000	35,000,000
June, . . .	29,969,000	20,417,000	38,127,000	21,000,000

Average runs and shipments each month of year to June 31st:

	Total Daily Runs.	Bradford Daily Runs.	Total Daily Shipm'ts.	Bradford Shipm'ts.	Charters.
January, .	70,401	62,229	55,798	40,864	33,877
February, .	81,853	72,825	63,062	47,183	43,075
March, . .	81,186	65,758	53,489	38,963	41,080
April, . .	80,158	67,392	54,413	35,662	35,453
May, . . .	83,397	75,472	56,478	43,329	47,220
June, . . .	89,103	78,701	65,266	47,980	54,829

REPORT
OF
OIL OPERATIONS FOR JUNE.

WELLS COMPLETED.

Bradford District.

TUNA VALLEY.

Lot.	*Operator.*	*Production.*
	Scott, Beatty & Taylor	10
	Zeliph, J. M. Tait	dry
	Fisher, Bannon & Kleckner	10

EAST BRANCH.

	E. T. Co., Enterprise Transit, No. 34	17
	" " " " 35	20
	Ingoldsby, A. DeGolier	15
	Drake, Fuller, Morris & Co., No. 10	10
	Brown, Morris & Co.	12
	Smith, P. T. Kennedy, No. 8	10
	Watrous, Shipman, Gilbert & Co.	10
	Deiter, Emery Oil Co., No. 18	15
	" " " 19	15
	Morris, " " 37	10
	Tibbitts, " " 7	12
	DeGolier, " " 13	12
	Salem, Quintuple Oil Co., No. 12	10
	DeGolier, " " 15	10

WEST BRANCH.

Emery, O. G. Emery, No. 3	15
King, W. C. Kuntz	15
Charles, Unknown Oil Co	dry
Gas Hollow, A. F. Heald, No. 4	20
Wells	21
Production	248
Average	11½

QUINTUPLE.

Lot	14, J. S. Wilson, No. 3	15
	111, Gardner & Heasley, No. 3	12
	166, E. Strong & Co	15
	203, Butler & Martin, No. 3	12
	208, Petrolia Oil Co	15
	242, Asher Brown, No. 3	12
	Wells	6
	Production	81
	Average	12

KENDALL CREEK.

Dolloph, Howe & Parker	10
Davis, H. J. Hammond, No. 5	10
Richardson, Peck & Freeman	10
" Mulqueen & Gahen	12
" James Smith	10
Turner, Jayne & Co,	10
Hodge, J. J. Carter, No. 22	15
Books, Hazlewood Oil Co., No. 43	25

FOSTER BROOK.

Willets, Willets & Co., No. 18	12
Childs pur., O. A. Childs & Co	10

C. B. & H. TRACT.

Argue Bros., & Cobb, No. 18	5
Seiple Bros	12
Porter & Gilmor	10

SUMMIT, MARION AND RIXFORD.

Borden, Urquhart, Lavens & Wallace	10

OIL VALLEY.

Borden, Forman & Lawton, No. 14	12
" Fertig & Henne	10
Hamlin, J. B. Daniels & Co., No. 17	12
Fullerton, Angell Oil Co., No. 28	30
" " " 29	40
" " " 30	30
Angell, " " 33	20
" " 34	20
" Weir & Steel	10
" Johnson & Co	15
Wells	24
Production	360
Average	15

INDIAN CREEK.

Hamlin, Boyne, Adams & Co	10
Miles Loup, Hart & Hicks, No. 20	12
Barse, George V Forman	15
Weston, J. L. McKinney & Co., No. 29	10
" Galey Bros., est	15

FOUR MILE.

Quartette, Quartette Oil Co., No. 23	15
Shattuck, Eaton & Howe	10
Bucher, Wm. Bucher	15
McCan, Geer Bros	dry
Chamberlain, Geo. Chamberlain, No. 3	15
Stevens, Book & Rhodes	10

KINZUA.

Bingham, Wood & Co	20
" Carter & Hurd, No. 12	30
" Cornwall, Parker & Hassan, No. 35	30

VANSCOY.

Campbell, Dew Drop Oil Co., No. 5	25
Richardson, Chapin & Co	15
Wells	16
Production	247
Average	15½

BIG SHANTY.

Whitney & Wheeler, No. 12 est	15
" " " 13	15
" " " 14	15
P. C. L. & P. Co., No. 29	10
" " 30	15
Dent Oil Co., No. 17	15
Sullivan, J. M. Tait, No. 5	20
" Book & Elliott, No. 3, est	15
Warrant 2,256, U. A. Andrews	20
" —— Jno. McKeown	50
Moody, Minard Run Oil Co., No. 88	60
" " No. 89	60
" " No. 90	40
Wells	13
Production	310
Average	26

COLE CREEK AND BINGHAM.

G. & Van V. pur., Union Oil Co., No. 15	10
" " " 16	10
Lot 399, Forest Oil Co., No. 30	25
405, " " 7	25
405, " " 8	12
404, Bennett & Quick, No. 17	15
416, Lee & Apple, No. 6	30
416, " " 7	40
491, Forman & Union Oil Co., No. 12	25
" " " " 13	25
" " " " 17	20
" " " " 23	15
492, Johnson & Union Oil Co., No. 40b	20
492, " " " 43b	20
492, " " " 41b. est	20
409, J. L. McKinney & Co., No. 9	10
439, " " 21	15
406, " " 5	10
Bingham, Geo. V. Forman, No. 20	35
Forman pur., " " 5	20
Simpson, " " 12	50
Wells	21
Production	452
Average	21½

ALLEGANY FIELD.

The report of this field is taken from the *Bradford Era* with exceptions of a few corrections that were found necessary.—[ED. AGE.

ALMA.

Lot	1, Morse & Hardison, No. 4	6
	1, Judd & Farrel	15
	2, Blatchley & Lowne, No. 2	10
	2, Morse & Hardison, No. 3	5
	17, Bellamy & Elliott, No. 2	15
	17, " " 3	20
	17, Workman, Gaskill & Schofield, No. 5	10
	17, Bellamy & Taylor	20
	18, O. P. Taylor, No. 6	15
	19, McBride & Co	5
	22, Duke & Morton, No. 20	15
	22, " " 21	12
	23, " " 22	15
	23, Anderson, Otis & Co., No. 25	14
	23, " " 36	16
	24, Whitehall & Black	20
	143, Harkness & Co	5
	Wells	17
	Production	218
	Average	13

BOLIVAR.

Lot	5, Star Oil Co., No. 5	25
	8, Hopkins, No. 4	20
	8, Malley & Chase, No. 2	8
	32, Manning & Co., No. 6	20
	32, Wm. Sawyer, No. 6	20
	32, Short & Son, No. 8	25
	36, Flynn Bros.	dry
	38, W. A. Cochran, No. 1	80
	38, " " 6	25
	38, " " 7	35
	38, " " 9	40
	38, Metcalfe & Co	5
	38, Geary, Hanley & O'Shay	10
	38, Frank J. Clemenger, No. 2	23
	38, H. Lennox & Co., No. 1	21
	38, Forman & Ballard, Eaton farm	35
	38, " Crandall farm No. 5	5
	38, " " " 6	20
	38, Curtis & Williams, No. 2	25
	38, Fisher Oil Co., No. 6	25
	38, " " 7	20
	38, " " 8	25
	38, Nicholson & Judd, No. 6	25
	38, " " 7	20
	38, Polar Oil Co., No. 4	60
	38-39, Weiser & Kincaid No. 21	25
	38-39, " " 22	25
	38-39, " " 23	25
	38-39, " " 24	25
	38-39, " " 25	30
	39, A. A. Richardson, No. 9	20
	39, " " 10	40
	39, C. C. Conroy, No. 3	30
	39, J. H. O'Neil & Co., No. 4	30
	39, " " 5	25
	39, " " 12	20
	39, H. P. Malone & Co., No. 12	15
	39, Smith & Wellman, No. 5	25
	89, " " 6	25
	39, " " 7	30
	40, Steele & Booth, No. 10	30
	40, Anderson & Humphrey	25
	40, Smith & Zeigle No. 12	25
	40, " 13	30
	40, McCalmont Oil Co	40
	45, McCormack & Co	45
	46, McLeod Bros., No. 2	50
	46, " " 3	30
	46, Clark & Davis, No. 2	50
	46, " " 3	80
	46, Polar Oil Co., No. 31	15
	46, Williams & Reed, No. 2	10
	46, Palmer & Thyng, No. 1	25
	46, " " 2	50
	46, Weiser & Kincaid, No. 3	20
	46, " " 4	40
	46, " " 5	10
	47, J. Varney & Co., No. 18	25
	47, " " 19	25
	47, Clarion Oil Co., No. 18	30
	47, " " 19	40
	47, " " 29	30
	47, " " 21	50
	47, A. J. Thompson, No. 10	23
	47, " " 11	25
	47, " " 17	20
	47, " " H	20
	47, Hefferman & Hanley, No. 15	15
	47, " " 16	25
	47, " " 18	25
	47, Anderson, Greenlee & Russell, No. 5	25
	47, Knox & Canfield, No. 7	25
	47, " " 8	dry
	47, Snyder & Co	dry
	48, McCalmont Oil Co	10
	48, "	7
	48, A. W. Nelson & Co., No. 4	10
	48, D. D. Moriarity & Co., No. 6	20
	48, Steele & Booth, No. 5	15
	54, Weiser & Kinkaid	dry
	55, Knapp Lease Oil Co., No. 4	20
	55, " " 6	25
	55, McCracken Bros. & Elison, No. 9	20
	55, " " 10	25
	55, Stock & Keeler	20
	55, Morton & Kinkaid, No. 2	20
	55, L. S. Whitney No. 4	25
	55, Columbia Oil Co., No. 11	20
	55, " " 2	15
	56, I. L. & W. P. Haldemon, No. 5	45
	60, Duke, Broidy & Co	dry
	63, H. F. Northrup & Co	25
	63, Columbia Oil Co., No. 5	20
	64, Thompson & Huver, No. 40	25
	64, I. Wagner, No. 8	25
	Wells	91
	Production	2377
	Average	26

WIRT.

Lot	17, Taylor & Humphrey, No. 5	15
	25, Fertig Bros., No. 9	20
	25, Hazlewood Oil Co., No. 18	25
	25, " " 19	35
	25, " " 24	20
	33, Taylor & Allen, No 10	25
	33, " " 11	25
	33, Wellman, Miner & Fuller, No. 2	50
	33, Wirt Oil Co	30
	34, O. P. Taylor & Co	dry
	41, Crandall & Co	12
	41, Wellman, Miner & Pitts, No. 23	50
	41, " " 24	50
	49, Lupher Bros	40
	49, A. A. Ribhardson	25
	49, A. & H. Painter	25
	49, "	20
	56, Nile Oil Co	3
	57, Kervin & Reid	15
	57, Coleman & Mulkin	12
	Wells	20
	Production	497
	Average	26

GENESEE.

Lot	7, Kervin & Reid, No. 1	25
	7, " " 2	25
	7, McCalmont Oil Co., No. 2	20
	7, I. E. Dean, No. 4	25
	7, Gray & Co.	18
	8, St. Joe Oil Co	25
	8, J. C. Smith & Co.	25
	8, H. J. Morton & Co., No. 22	25
	8, " " 23.	35
	8, Willets Bros., No. 22.	30
	12, Kneeland & Gamble.	dry

Lot 14, Huber & Co. . . . . dry
16, R. H. Boughton 20
16, A. P. Tanner. 30
16, Vandergrift & Miller. 20
16, Merrill & Perrin 25
24, Wheeler & Galey Bros. 20
24, Daggett Oil Co., No. 5. 10
24, " " 15 15
24, " " 16 15
24, " " 18 25
24, R. R. Armor, No. 2 20
24, Yokum & St. Clair. . . . . dry

Wells 23
Production. 423
Average 14

CLARKSVILLE.

Lot 3, United Pipe Line . . . . . gas
9, F. M. Blyestone & Co., No. 2 . . . 18
9, H. H. Argue, No. 2 8
9, H. C. Werthman, No. 2 8
10, Smith & Gleason, No. 1 5
17, Kepler & Co. 6
17, Ege Oil Co 5
18, Barton, Warner & Hammond. . . . dry

Wells 8
Production. 52
Average 2

SCIO.

Lot 1, Allen & Taylor 10
1, Basch & Co 8
2, Blatchley, Murphy & Co. 10
2, Taylor, Noble & Allen. 12
—Wellsville Empire Gas Co . . . . . dry

Wells 4
Production. 40
Average 1

WARREN DISTRICT.

CHERRY GROVE.

Lot 647, Anchor Oil Co. 1300
619, Capt. Murphy, No. 1, drilled deeper. 1200
611, Forest Oil Co., Mahoopany 1400
635, Anchor Oil Co., No. 1 1000
635, Reid Brenneman. 1000

Wells 5
Production. 5900
Average 1180

CLARENDON.

Lot 78, W. Beatty, No. 19. 8
80, Thayer & Crosby, No. 4. 10
80, T. Murphy, No. 3 10
80, Winsor Bros., No. 12 15
106, Short, Oyster & Co., No. 6 . . . . dry
105, Shuger & McLouth, No. 2 15
106, M. D. Archibald & Co., No. 6 . . . dry
107, D. B. Foster, No. 3 10
107, H. P. Malone, No. 5. 15
109, Little Toby Oil Co., No. 4 10
162, Magee & Smith . . . . . dry
465, Hertzell & Nesmith 10
466, Riddlesperger Bros , No. 3. . . . 10
495, Gilson & Gilbert est,. 10
495, Aiken Bros., est 10
498, S. W. Waters & Co., No. 3 10
498, F. W. Pratt & Co., No. 3. 15
498, Geo. Given, No. 5 15
498, New Hope Oil Co., No. 3 12
527, Tannery Oil Co., No. 4 10
528, Beaumont & Drake, No. 1 15
528, Zeittle & Co. 10
528, Nickle Oil Co., No. 4 15
528, " " 5 15
528, Armstrong & Speer, No. 10. . . . 15
529, Leake Bros 8
530, Ralph Bros 3
530, Childers & Beckner 8
531, Young & Co. 5
556, Leopold Bros 9
556, Conrath & Co 8
556, G. W. Watkins. . . . . dry

SHEFFIELD.

Lot 408, Magee & Horton, No. 10. 20
408, " " 11. 15
408, Geo. Wetmore & Co., No. 10 20
408, " " 11 . . . . dry

GLADE.

Myers, John Bell. 5
Watson, Brown Bros 10
Stone, Glade Oil Co 3
Myers, J. Smith & Co. . . . . dry
Meade, Ralph Bros. . . . . dry
Leonhart, Brouch & Smith 10
Hall, O. Hoffman 10
Roy, James Roy. 10

Wells 44
Production. 421
Average 9½

LOWER FIELD.

BUTLER COUNTY.

Stewart, Cornplanter Oil Co . . . . . dry
Gruver, K. H. McBride. . . . . dry
McKee, McConnell & Co. . . . . dry
Renfrew, Phillip Bros . . . . . dry
Jenkins, Simcox & Co. 8

CLARION COUNTY.

Call, Butler & Smith . . . . . dry

BYRON CENTRE.

D. Crawford, Wilkins & Crawford 2
D. Crawford, Rawley & Co. 5
E. Crawford, E. Crawford & Co, No. 10. . 5

VENANGO.

McBride, W. Chambers 8
Dougherty, W. J. Hulings 8
Gates, J. J. Fisher 8
Tract 47, J. J. Fisher. 10
Cornplanter, J. Ross.. 6
Finchbaugh, Johnson & Co. . . . . dry

Wells 15
Production. 60
Average 4

DRILLING WELLS.

BRADFORD DISRICT.

TUNA VALLEY.

Leonard, D. S. Allen . . . . . rig
Scott pur., Abbott & McGinnis . . . . . rig
Tack, Campbell & Co. . . . . rig

EAST BRANCH.

Gregg, McIntire . . . . . rig
Hawkins, P. C. L., & P. Co., & P. T Kennedy, No. 11 . . . . . rig
Stettheimer, Burrows & Hazleton, No. 6 . . rig
Clapp, J. M. Clapp, No. 43 400
Newell, J. S. Book & Co., No. 15 . . . . rig
Lewis Run, C. D. Whitney, shut down . . . 1200
" " . . . . . rig
Deiter, Emery Oil Co., No. 20 . . . . . rig
" " " 21 . . . . . rig
Morris, " " 38 300
" " " 39 400
" " " 40 . . . . . rig
Tibbetts, " " 5 300
" " " 8 400
DeGolier, " " 14 100

QUINTUPLE.

Lot 19, E. K. West . . . . . rig
25, J. S. Wilson . . . . . rig
150, B. F. Brinton . . . . . rig
156, Chemung Oil Co. . . . . rig
175, D. Atwater & Co. . . . . rig
176, H. A. Booth & Co. . . . . rig
202, Butler & Martin . . . . . rig
203. " . . . . . rig
208, Farren & Farmer 1500
260, E. T. Howes . . . . . rig
295, Theo. Barnsdall 450
295, " . . . . . rig bldg

WEST BRANCH.

Chattell, Lewis & Co. . . . . sand
Gas Hollow, A. F. Heald . . . . . rig bldg
Crooker, Jennings & Co . . . . . rig
Pease, George Pease 600
Cranmer, Chapin & Co., ... rig
Mack, " No. 7 . . . . . rig
Stinson, J. G. Williams . . . . . rig

Drilling 11
Rigs 26

Total. 37

KENDALL CREEK.

Book, Hazlewood Oil Co , No. 44 700
" " 45 300
Storms, Wright & Sawyer . . . . . rig
Monroe, Hyde & Simpson 900
Kilbury, Kilbury & Williams 900
Schoonover, Jane Schoonover 500

FOSTER BROOK.

Willets, O. Smith Oil Co. . . . . rig
" I. Willets . . . . . 2 rigs
" Willets & Co. . . . . 2 rigs
Cronen, J. H. McMurray & Co. . . . . rig
E. T. Co., F. W. Mitchell & Co., No. 3, shut down 100
Lynch, Lynch & McMurray . . . . . rig
Childs, O. A. Childs & Co . . . . . rig
C. B. & H. Treat & Porterfield . . . . . 2 rigs
A. J. Caldron . . . . . drilling
Young & Hugus . . . . . rig
L. W. Eighmie . . . . . sand
Baum & Richardson . . . . . rig
Burns & Monroe . . . . . rig
Porter & Gilmor, No. 14 400

SUMMIT, MARION AND RIXFORD.

Borden, Shear Bros., & Braunschweiger . . rig
Dodge, Dodge & Clark . . . . . rig
Irons, Duke Centre Gas Co. . . . . rig
Berger, P. T. & W. C. Kennedy 700
Ledom, Robert Gregg . . . . . rig

Drilling 10
Rigs 18

Total. 28

OIL VALLEY.

Duke, C. H. Coffin & Co . . . . . rig
Borden, Forman & Union Oil Co., No. 15 . . 1200
" Forman & Lawton, No. 15 . . . . sand
" Fertig & Henne 600
Fullerton, Angell Oil Co. . . . . 4 rigs
Angell, " . . . . . 4 rigs
" James Smith . . . . . rig
" Weir & Steele . . . . . rig

INDIAN CREEK.

Hamlin, Mallory Bros., ... 1000
Miles Loup, James O'Neil, No. 10 . . . . rig
" " " 11 . . . . rig
Hart & Hicks, No. 22 . . . . . rig
H. Loup, J. D. Downing & Co. . . . . 2 rigs
Pine Lot, Evans Bros., & Co . . . . . rig
Barse, J. D. Downing . . . . . rig
" Bussell & Urquhart . . . . . rig
L. Loup, Follett Bros . . . . . 2 rigs
Keyes, Indian Oil Co. . . . . rig
Dodge, Frank Hardwick . . . . . rig
Gale, Curtis & Taylor, No. 6 . . . . . rig
" " " 7 . . . . . rig
" Moore & Watson . . . . . rig
Gale, Thompson & Canfield . . . . . rig

FOUR MILE.

McCartney, G. W. Funk, No. 3 . . . . . rig
Donohue, Brown & Norris . . . . . rig
VanCampen, Geo. VanCampen . . . . . rig
Waters, Chas. Gillespie . . . . . rig
Bucher, Wm. Bucher . . . . . rig
Shattuck, Waco Oil Co . . . . . 4 rigs
Howard, Merrill & Perrin, No. 19 . . . . rig

KINZUA.

Bingham, J. M., & Thos. Tait, No. 6 . . . . rig
" J. M. Tait, No. 10 . . . . . rig
" Carter & Hurd, No. 13 1100

VANSCOY.

Jamison, Jamison & Co . . . . . rig
Chapel Fork, Brown & Co . . . . . rig

Drilling 5
Rigs 41

Total 46

BIG SHANTY.

Dent lands, P. C. L. & P. Co . . . . . 2 rigs
" Bowen, Wilcox & Co., shut down 240
" Whitney & Wheeler . . . . . 2 rigs
Bingham, Fertig & Henne, No. 9 . . . . . rig
" Hamlin & Rose, No. 8 . . . . . rig
" Geo. V. Forman . . . . . rig
Sullivan, Mills & Mullen . . . . . 3 rigs
" Book & Co., No. 6 . . . . . rig
Taylor, Atlas Oil Co., No. 2 600
" " " 1 . . . . . sand
N. W. M. Co., Union Oil Co., No. 17 . . . sand
Warrant 2,256, Bennett & Mullen, shut down, sand

COLE CREEK AND BINGHAM.

G. & Van V. pur., Union Oil Co., No. 25 . . rig
" " " 26 . . rig
Lot 399, Forest Oil Co., No. 28 . . . . . rig
399, " " 29 . . . . . rig
M. W. & H., W. W. Thompson, No. 8 . . . rig
" " " 9 . . . rig
Lot 394, P. T. & W. C. Kennedy, No. 8 . . . rig
394, " " 10 . . rig
405, Forest Oil Co., No. 9 . . . . . rig
405, " " 10 . . . . . rig
407, Bennett & Quick, No. 16 . . . . . rig
416, Lee & Apple, No. 4 . . . . . rig
416, " " 8 . . . . . rig
416, " " 9 . . . . . rig
491, Forman & Union Oil Co., No. 14 . 1200
495, " " 10 . 700
495, " " 19 . . 1200
Simpson, Geo. V. Forman, No. 12 . . . drilling
Lot, 492, Johnson & Union Oil Co., No. 38b . rig
492, " " 39b . rig
492, " " 45b . 200
423, Newell & Palmer . . . . . rig
Simpson, Geo. V. Forman, No. 12 . . . . drilling

Drilling 11
Rigs 28

Total 39

ALLEGANY FIELD.

ALMA.

Lot 1, A. Jackson . . . . . rig
1, Phillips Brothers 900
1, Farrell & Judd . . . . . rig
2, Morse & Hardison . . . . . 2 rigs
2, Blatchley & Lown 400
17, Scott & Elliott, No. 6 900
17, " " 7 . . . . . rig
17, Chamberlain & Co 500
17, Lewis & Co . . . . . rig
17, Bellamy & Elliott . . . . . 2 rigs
18, G. M. Barney . . . . . 2 rigs
18, O. P. Taylor . . . . . 4 rigs
18, Mrs. O. P. Taylor, fishing . . . . . sand
18, " . . . . . rig
22, Wheeler & Newton . . . . . sand
22, Duke & Norton Oil Co., No. 27 . . . rig
22, " " 24 . . . 400
23, " " 25 . . . 600
23, " . . . . . rig
23, Anderson, Ois & Co . . . . . 2 rigs
23, Anderson . . . . . 2 rigs
38, Duke & Norton . . . . . rig
38, Westervelt . . . . . 2 rigs
39, Duke & Norton . . . . . rig
40, Dewees & Weaver . . . . . sand
51, Nicholson & Co . . . . . rig
54, Durkee, Young & Co . . . . . rig
69, Baker & Co . . . . . rig
79, " 1000
100, Meser & Co . . . . . sand
143, Buschee & Cole, No. 4 600

Drilling 12
Rigs 28

Total 40

BOLIVAR.

Lot 2, Scott & Elliott, shut down . . . . . sand
6, Star Oil Co., No. 9 300
6, Reader & McCoy 800
6, Penzer & Love, No. 4 700
6, " " 5 . . . . . rig
6, Wesley Chambers, No. 3 . . . . . sand
6, Warner & Collins, No. 2 500
14, Carroll Bros . . . . . rig
15, Empire Gas Co . . . . . rig
16, " . . . . . rig
16, Peckham & Freeman . . . . . 2 rigs
23, Johnson & Conroy . . . . . rig
33, Geo. K. Anderson . . . . . rig
24, Empire Gas Co. . . . . rig
24, Taylor & Co . . . . . rig
24, Bartlett & Johnson, shut down . . . 500
31, Foreman & Balard, No. 5 . . . . . rig
31, Shreeves, Lowery & Co. No. 6 . . . sand
32, Wm. Sawyer . . . . . rig
32, Short & Son, No. 9 . . . . . rig
32, " " 10 . . . . . rig
32, Chauncey Oil Co., No. 12 650
32, Manning & Co . . . . . 2 rigs
32, Smith & Wellman . . . . . rig
37, Plummer & Co 500
38, W. A. Cochran, No. 8 . . . . . rig
38, " " 20 700
38, " " 21 700
38, " . . . . . 3 rigs
38, Lemix & Co, No. 2 250
38, Fisher Oil Co., No. 9 . . . . . rig
38, " " 2 lease 350
38, Schoonmacher & Co 550
38, Glass & Co . . . . . rig
38, Curtiss & Williams . . . . . rig
38, Metcalf & Co., fishing . . . . . sand
38, Gearey, Hanly & O'Shay . . . . . rig
38, Frank J. Clemenger, No. 3 250
38, J. G. Haymaker, shut down . . . . sand
38, Kervin & Alshouse, No. 4 . . . drilling
38, Weiser & Kinkaid . . . . . rig
39, " No. 27 700
39, " " 28 400
39, " " 29 300
39, " " 30 100
39, " " 31,32,33,34,35 rigs
39, A. A. Richardson, No. 11 . . . . . rig
39, J. McVey, No. 2 850
39, J. H. O'Neil & Co., No. 9 250
39, Capt. H. C. Stevens, No. 5 850
39, " . . . . . 3 rigs
39, Smith & Wellman, No. 8 . . . . . sand
39, " " 9 . . . . . sand
39, " " 10 500
39, " " 11, 12, 13 . . rigs
40, Meldrum Farm Oil Co., No. 16 . . . 650
40, " " 17 . . . rig
50, Steele & Booth, No. 11 . . . . . drilling
40, Smith & Zeigler, No. 14 400
40, " " 15 200
40, " " 16 . . . . . rig
40, " " 17 . . . . . rig
40, McCalmont Oil Co 500
42, Childers & Co . . . . . drilling
46, Clark & Davis, No. 4 400
46, " . . . . . 2 rigs
46, " . . . . . rig bldg
46, Forman & Weiser Bros., No. 2 . . . sand
46, " " 3 . . . 400
36, " " 4 . . . rig
46, Williams & Reed, No. 3 . . . . . rig
46, Weiser & Kinkaid, No. 6 700
Lot 46, Weiser & Kinkaid, No. 7 150
46, " " 8 100
46, " . . . . . 2 rigs
46, McLeod Bros., No. 4 . . . . . rig
46, " " 5 . . . . . rig bldg
46, Lufkins & Co., No. 1 200
46, " " 2 . . . . . rig bldg
47, J. Varney & Co., No. 20 500
47, " " 21 . . . . . drilling
47, Whitney & Good . . . . . sand
47, A. J. Thompson, No. 6 500
47, " " 7 350
47, " " 8 . . . . . sand
47, " " 12 . . . . . rig
47, Hefferman & Hanley, No. 5 . . . . rig
47, " " 17 700
47, Anderson, Greenlee & Russell . . . rig
48, McCalmont Oil Co . . . . . sand
48, Steele & Booth 300
50, Workman, Gaskell & Schofield . . . rig
52, Shirley & Hacket 1000
54, Patterson, Kittenger & Kern . . . . rig
55, Hogan & Murphy, fishing 500
55, Knapp Lease Oil Co., No. 5 . . . . rig
55, McCracken Bros. & Elison, No. 11 . rig
55, Morton & Kinkaid, No. 3 . . . . . rig
55, L. S. Whitney, No. 5 . . . . shut down
55, Columbia Oil Co., No. 6 500
55, " . . . . . 6 rigs
55, Weaver Bros. & Lavens . . . . . rig
56, Lineman & Beck . . . . . rig
62, Book & Rhodes . . . . . rig
63, Columbia Oil Co., No. 1 . . . . . rig
64, Thompson & Huver, No. 15 . . . drilling
64, " . . . . . 2 rigs

Drilling 56
Rigs 71

Total 127

WIRT.

Lot 17, Taylor & Humphreys No. 6 250
17, " " 7 . . . . rig
17, " " 8 . . . . rig
25, Hazelwood Oil Co., No. 26 . . . . . rig
26, " " 27 . . . . . rig
23, Lem Whitney . . . . . rig
33, Taylor & Allen, No. 12 . . . . . rig
33, " " 13 . . . . . rig
33, Wellman, Miner & Fuller . . . . . sand
33, " 500
33, " 300
33, " . . . . . rig
33, " . . . . . rig
33, " . . . . . rig
33, Wirt Oil Co 600
33, Knox Bros., No. 4 . . . . . rig
41, Wellman, Miner & Pitts . . . . . rig
41, " . . . . . rig
41, " . . . . . rig
41, " . . . . . rig
41, Finnegan, Nelson & Wall, No. 4 . . rig
41, Mrs. Griffin . . . . . rig
41, D. D. Flannigan . . . . . rig
41, Mattock & Taylor . . . . . sand
49, A. A. Richardson . . . . . rig
57, Thompson & Loan, No. 12 . . . . . rig

Drilling 6
Rigs 20

Total 26

GENESEE.

Lot 7, Wiser Bros . . . . . sand
7, I. E. Dean 1000
7, " . . . . . rig
7, " . . . . . rig
7, McCalmont Oil Co 500
7, " shut down 1240
7, " " 1450
7, " . . . . . rig
7, " . . . . . rig
7, " . . . . . rig
7, " . . . . . rig
7, " . . . . . rig
7, " . . . . . rig
8, Willets Bros., No. 22, shut down . . sand
8, " " 23 " . . sand
8, " " 24 . . . . . rig
8, " " 25 . . . . . rig
8, " " 26 . . . . . rig
8, " " 27 . . . . . rig
8, H. J. Morton & Co., No. 24 . . . . rig
8, " " 25 . . . . rig
16, Wilson Bros 900
16, Taylor, Hill & Smith . . . . . rig
16, Morrison & Bennett . . . . . rig
16, Carlin Bros. & Golden 500
16, A. P. Tanner 600
16, D. W. Canfield . . . . . rig
16, G. S. Bussell . . . . . rig
21, Willets & Cranston . . . . . rig
21, Love Bros 1000
23, Matt. Hughes . . . . . rig
24, Willets & Cranston . . . . . sand
24, Daggett Oil Co., No. 17 . . . . . rig
24, " " 20 . . . . . sand
24. Parks & Hammond 900
29, Willets & Cranston . . . . . rig
30, Bennie, Gordon & Co . . . . . sand

Drilling 15
Rigs 22

Total 37

CLARKSVILLE.

Lot 1, Knox Bros. & Co. 100
1, " . . . . . rig
9, Capt. Brett, No. 5 900
9, Meal Ticket Oil Co . . . . . rig
10, Smith & Gleason . . . . . rig bldg
17, Houston & Crecht, No. 4 . . . . . rig
17, " " 5. . . . rig bldg
17, Duke Centre parties . . . . . 2 rigs
17, Willits & Cranston. . . . . rig
19, Pratt & Fink 200

SCIO.

Lot 1, Frederick Bash, No. 1 . . . . . sand
2, Blatchley Murphy & Co., No. 3 . . . rig
2, Morse & Hardison . . . . . rig
2, Nameless Oil Co., No. 3. . . . . rig
3, Wheeler & Co . . . . . rig
3, O. P. Taylor 500

Drilling 5
Rigs. 12

Total 17

THE WARREN DISTRICT.

CHERRY GROVE.

Lot 589, Wilcox & Co . . . . . rig
590, Mehoopany Oil Co. No. 1 300
590, " " 2 . . . rig bldg
608, Cornen Bros 50
610, Broder, Hays & Co 400
610, Bayne, Fuller & Co 350
610, T. Barnsdall & Co. 200
610, J. Bryan. . . . . rig
610, Armor, Hays & Roth . . . . . rig bldg
610, Munhall & Smithman, No. 1 300
610, " " 2 . . . . rig
610, " " 3 . . rig bldg
610, Minard Run Oil Co. . . . . 2 rigs bldg
611, Forest Oil Co., No. 2. . . . . rig
611, " " 3. . . . . rig bldg
611, " " 4. . . . . rig
611, " " 5. 100
611, " " 6. 200
611, " " 7. . . . . rig
611, " " 8. 300
618, Chas. K. Book & Co, No. 1 500
618, " " 2 . . rig bldg
618, J. M. Guffy 300
619, A. A. Richardson, Div. 1 . . . .rig bldg
619, Ziegler & Smith, Div. 2 . . . . . rig
619, " " 3 . . . . . rig
619, Christy Bros., Div. 4. . . . . rig
619, " " 5. . . . . rig bldg
619, J. R. Morse, Div. 6 . . . . . rig
619, Ziegler & Smith, Div. 8 . . . . . rig
619, J. Markham, Div. 9 . . . . . rig
619, J. H. VanWormer, Div. 10. . . . . rig
619, A. A. Richardson, Div. 12 100
619, " " 13 100
619, P. A. Derby, Div. 14. . . . . rig
619, Whitehead & Baylor, Div. 16. . rig bldg
619, Lacy, Firman & Co., Div., 16 . . . rig
619, Fertig & Clark, Div. 17 100
619, Polar Oil Co., Div. 18 400
619, W. Allshouse, Div. 19 300
619, Anglun, Elliott & Co., Div. 20 . . . rig
619, Tack Bros., Murphy Div. . . . . 2 rigs
619, F. W. Andrews . . . . . rig
619, Grogan & Larkin . . . . . rig bldg
619, F. M. Aiken . . . . . 2 rigs
619, Fertig & Henne, No. 1. 500
619, " " 2. . . . . rig
619, " " 3. . . . rig bldg
619, Capt. Murphy, Div. 7 . . . . . sand
619, " " 6 500
619, " " 5 300
619, " " 9 . . . . . rig bldg
619, " " 10 . . . . . rig bldg
619, " " 11 . . . . . rig bldg
620, Carter & Hurd, No. 1 400
620, " " 2 . . . . . rig
620, " " 3. . . . . rig bldg
620, J. Snow . . . . . rig
620, E. Farnsworth . . . . . rig bldg
630, J. R. Goldsborough 100
620, T. B. Simpson 100
620, John Bell . . . . . rig bldg
620. C. K. Book & Co. . . . . rig
620, D. Brown & Co. 100
621, Anderson . . . . . rig bldg
633, Murphy & Co. 1200
634, Union Oil Co. . . . . sand
634, Wickam & Co. 100
634, Silliman, Kuhn & Shugert . . . rig bldg
634, Waugh & Co. . . . . rig bldg
634, Murphy & Co. . . . . rig
635, Anchor Oil Co., Div. 2 600
635, Berry & Kelly, Div. 3 200
635, Stafford & Co., Div. 4 100
635, Zeigler & Smith, Div. 5 . . . . . rig
635, Frank Wright, Div. 6 . . . . . rig
635, Goldsborough & Co., Div. 7 600
635, Merrick & Harris, Div. 8 . . . . . rig
635, Nickle Oil Co., Div. 9 1200
635, Goldsborongh & Clark, Div. 10 . . . 1000
635, A. P. Tanner, Div. 11 200
235, A. Sheidemantle, Div. 12 1400
635, Caldron Bros., & Lecky, Div. 13 . . 300

Lot 635, W. Allshouse, Div. 14 500
635, N. C. Clark & Co., Div. 15 . . rig bldg
635, Sam. Crosby, Div., 16 300
635, Jaynes & Johnson, Div. 17 . . . . rig
635, Pemberton & Co., Div. 18 . . . rig bldg
635, J. C. Lineman, Div. 19 . . . . . rig
635, C. H. Cramer, Div. 20 800
635, " " 20 300
635, Murphy, Anglun & Co., Div. 21 . . 300
635, Thompson & Andrews, Div. 22 . . 400
635, Thayer, Babcock & Co., Div. 23 . . rig
635, " " 24 . . rig
635, S. Comfort, Div. 25 . . . . . rig bldg
635, Yaliant Oil Co., Div. 26 100
635, C. Miller & Co., Div. 27 100
635, " " 28 . . . . . rig
635, " " 29 . . . . . rig bldg
635, Reed & Brenneman, Div. 2 . . . . rig
635, Painter Bros., Div. 4 . . . . . rig bldg
635, Eaton & Parker, Div. 5 200
635, Beaumont & Drake, Div. 6 100
635, Eaton & Howe, Div. 7 100
635, Capt. Tracy, Div. 8 . . . . . rig
636, Hamsher & Husband, No. 1 400
636, " No. 2 . . rig bldg
636, A. J. Gartland . . . . . rig bldg
636, Halleck Bros., & Johnson . . . rig bldg
636, " . . . . . rig
636, Chapin & Co . . . . . rig bldg
636, Book & Payne . . . . . rig bldg
636, Emery Oil Co . . . . . rig bldg
636, Roy & Henry . . . . . rig
637, Potts & Slike . . . . . rig bldg
637, P. T. Kennedy & Co. . . . . rig bldg
644, L. A. Brenneman . . . . . rig
645, Rockland Oil Co. . . . . rig
645, Tom Kervin . . . . . rig bldg
645, MacPherson & Co. . . . . rig bldg
645, Johnson, Murphy & Co. . . . 3 rigs bldg
646, Union Oil Co. No. 2 . . . . . sand
646, " " 3 . . . . . sand
646, " " 4 500
646, " " 5 800
646, Schonblom & Bradley . . . . . rig bldg
646, Anchor Oil Co. . . . . rig bldg
647, Anchor Oil Co., No. 2 . . . . . sand
647, " " 3 1400
747, " " 4 200
647, " . . . . . rig bldg
648, Whale Oil Co, ... 1000
650, H. L. Blackmarr . . . . . rig bldg
657. Kuhn & Robinson . . . . . rig bldg
657, C. K. Book & Co. . . . . rig
757, " . . . . . rig bldg
657, J. L. McKinney & Co. . . . . rig
658, Painter Bros., Div. 1 . . . . . rig bldg
658, Anchor Oil Co. . . . . rig bldg
659, Johnson & Co. . . . . rig bldg
659, Anchor Oil Co., shut down . . . . sand
659, Union Oil Co., shut down . . . . sand
659, " No. 2 200
660, Forest Oil Co. . . . . rig bldg
671, R. E. Green, shut down . . . . . sand
672, Tim Mullen, Div. 2 1200
672, McDonald & Markham, No. 7 . . . 800
672, J. R. Goldsborough, No. 11 . . . . sand
672, Duke & Harris, No 13 . . . . . rig
672, B. F. Thornton, No. 15 . . . . . rig
672, Mattison & Co., No. 21 . . . . rig bldg
672; Tom Loan, No. 22 . . . . . rig bldg
672, Thompson & Co., No. 20 . . . rig bldg
673, A. A. Richardson . . . . . rig bldg
681, O. F. Schonblom . . . . . rig

Drilling 63
Rigs 97

Total 160

CLARENDON.

Lot 55, W. Beatty. . . . . rig
78, " 200
78, " . . . . . rig
79, Anchor Petroleum Co . . . . . rig
78, J. Bryan. . . . . rig
80, T. Barnsdall & Co 800
80, May & Groves, No. 2 . . . . . rig
107, H. P. Malone, No. 6. . . . . rig
108, Grandin & Hague . . . . . rig
168, Duke & Harris . . . . . rig
168, Eureka Oil Co., No. 5 . . . . . rig
161, Hem & Mealy Bros., No. 2 100
498, Crowell & Estep. . . . . rig
498, Hopewell, Payne & Co. . . . . rig
498, F. Pratt & Co., No. 4 . . . . . rig
498, " " 5 . . . . . rig
527, Tannery Oil Co., No. 5 . . . . . rig
528, Beaumont & Drake, No. 2 . . . . . rig
529, C. Wilder . . . . . rig
531, Long, Firman & Co 500
556, Bryan & Hopkins, No. 6. . . . . rig
556, G. W. Watkins . . . . . rig bldg
556, Custer City Oil Co 300
556, Leopold Bros 200

MISCELLANEOUS.

Pleasant twp , S. Tolles 1000
Limestone twp., lot 543, Marsh & Brown . . 200
Warrant 3,064, Pine Grove Oil Co. 200
Russelburg, Ed. Wightman. . . . . rig bldg

GLADE.

Roy, James Roy. . . . . rig
King Hollow, Marsh & Brown . . . . rig bldg
Nesmith, Nesmith & Co 500

SHEFFIELD.

Lot 368, Magee & Horton . . . . . rig
396, Horton & Crary 800
408, Geo. Wetmore & Co . . . . . rig
397, " . . . . . sand
Henry's Mills, H. B. Porter, shut down . . sand
Williamson, McKinney & Co., shut down . sand
Lot 211, Fouby & Co . . . . . rig
—, Clark & Co. 100

FOREST COUNTY.

Tract 5,502, Unknown, shut down 1000
5,211, Tioneta Oil Co 1300
5,218, Grove, Hart & Co . . . . . rig bldg
Cooper, Blue Jay Oil Co 800
Stewart, Blue Jay Oil Co . . . . . rig bldg
Fox Farm Oil Co., Blue Jay Co. . . . . rig
" May & Co. . . . . rig

Drilling 18
Rigs. 28

Total 46

THE LOWER FIELD.

BUTLER AND ARMSTRONG.

Farm.	*Operator.*	*Depth.*
Shorts, Baldridge O. & T. Co.		1000
Webber,	" "	700
Mahood,	" " fishing.	400
Renfrew, Phillips Bros		1000
Gruver, Simcox & Myers, No. 2		500
Renfrew,	" "	700
Kellerbaugh, Simcox & Myers		800
Wm. Brown, Union Oil Co		700
Webber, A. Shidemantle		1000
" H. L. Schmuck.		600
Thorne, Griswold & Gibson.		1200
Black, Harry Parker		1000
McKee. McConnell & Co.		rig
Shorts, H. W. Walker		rig
" Chas. King.		rig
Reiber & Co., B. O. & T. O		rig
Heckert,	"	rig
Craw,	"	rig
Johnston,	"	rig
Duffy, E. O. Emerson		rig

CLARION COUNTY.

J. T. Hurst, Jacob Hahn & Co	rig
Lynes, Piper & Co.	10
King farm, King Bros	900

BYROM CENTRE.

T. Maginess, T. Maginess	200
Miller farm, Story & Adams	100
T. Maginess, Pattorf Bros	rig
Sutton farm, Tom Hays	100

Drilling 17
Rigs. 10

Total. 27

SUMMARY.

Wells Completed.

Section.	*No. of Wells.*	*Barrels.*	*Average.*	*Dry.*
Tuna Valley, East Branch, West Branch	21	248	11½	2
Quintuple Tract, Kendall Creek, Foster Brook	6	81	12	..
Summit, Marion and Rixford, Oil Valley	24	380	15	..
Indian Creek, Four Mile, Kinzua	16	247	15½	1
Big Shanty	13	310	26	..
Cole Creek & Bingham	21	452	21½	..
Totals	101	1,718	17	3

ALLEGANY FIELD.

Alma	17	218	13	..
Bolivar	91	2,377	26	5
Genesee	28	423	14	3
Clarksville	8	50	6⅛	2
Scio	4	40	10	1
Wirt	20	497	26	..
Totals	163	3,605	17¾	11

THE WARREN DISTRICT.

Cherry Grove	5	5,900	1,180	..
Clarendon, Sheffield, Glade	44	421	9½	7
Totals	49	5,321	107¾	7

LOWER FIELD.

Butler, Clarion, Byrom Centre, Venango County	15	60	4	6

Grand Summary.

	Wells.	*Prod'ct'n.*	*Average.*	*Dry.*
Bradford	101	1,718	17	3
Allegany	163	3,605	17¾	11
Warren	49	5,321	107¾	7
Lower Field	15	60	4	6
	308	10,704	33 1-7	27
May	457	9,525	20¾	12

SUMMARY.

Drilling Wells and Rigs.

	Drill.	*Rigs.*	*Total.*
Tuna Valley, East Branch, Quintuple, West Branch, Kendall Creek	11	26	37
Foster Brook, Summit, Marion and Rixford	10	18	28
Oil Valley, Indian Creek, Four Mile, Kinzua, Vanscoy	5	41	46
Big Shanty, Cole Creek and Bingham	11	28	39
	37	113	150

ALLEGANY FIELD.

Alma	12	28	40
Bolivar	56	71	127
Wirt	6	20	26
Genesee	15	22	37
Clarksville	5	12	17
	94	153	247

THE WARREN DISTRICT.

Cherry Grove	63	97	160
Clarendon, Miscellaneous, Glade, Sheffield, Forest County	18	28	46
TOTALS	81	125	206
Lower Country	17	10	27
GRAND TOTALS	229	401	630
Grand Total, May	386	422	808

SUBSCRIBERS must remember that we are extremely anxious to take in some first-class loafing place such as Saratoga, Cape May, the Thousand Islands, etc., etc. Don't forget us.

HACKMEN in the Warren district are having a rich harvest. For the past two months they have been realizing from eight to fifteen dollars a day and sometimes even more than this.

STATEMENT made by the United Pipe Lines July 10th, 1880, and enlarged to June 30th, 1882. It gives gross stocks, sediment and surplus, net stocks, outstanding balances, receipts (or runs) from all sources, and total deliveries:

	Gross Stocks.	Sediment and Surplus.	Net Stocks.	Outstanding Acceptances.	Credit Balances.	Receipts from all Sources.	Total Deliveries.
1877—April	1,895,153.71	77,386.70	1,817,767.01	449,640.14	1,368,126.87	200,570.81	125,797.90
May	1,762,602.64	75,363.87	1,687,237.77	663,663.71	1,003,574.06	493,200.58	619,612.26
June	1,596,367.68	81,255.42	1,488,112.26	661,786.57	826,325.69	538,906.95	737,609.77
July	1,482,433.51	81,741.50	1,400,692.01	667,166.36	733,625.65	615,145.46	699,476.18
August	1,489,052.53	81,144.63	1,407,907.90	643,281.46	764,626.44	673,403.04	666,144.28
September	1,339,032.27	67,163.68	1,271,868.59	552,676.26	719,192.33	625,225.37	769,745.57
October	1,434,728.78	46,771.99	1,387,956.79	673,850.05	714,106.74	687,094.59	570,092.71
November	1,691,399.52	39,418.00	1,651,981.52	657,591.36	994,390.16	913,644.19	649,242.70
December	2,830,413.36	68,729.63	2,761,685.73	754,338.25	2,007,347.48	1,656,150.37	506,332.99
1878—January	3,124,641.15	72,453.43	3,052,187.72	864,711.41	2,187,476.31	872,681.18	715,149.78
February	3,439,526.98	82,452.66	3,357,074.32	1,404,292.13	1,952,782.19	1,030,688.44	720,478.14
March	3,940,000.65	92,963.06	3,847,037.59	1,487,430.50	2,359,598.09	1,196,251.26	701,681.27
April	4,335,274.84	133,935.76	4,201,340.08	1,615,791.19	2,585,548.89	1,137,359.40	778,050.53
May	4,609,681.45	150,117.76	4,459,563.69	2,065,333.31	2,394,230.38	1,104,352.40	843,081.33
June	4,719,699.25	181,800.03	4,537,899.22	1,950,420.81	2,587,478.41	1,092,604.02	1,004,474.55
July	4,885,851.72	229,080.78	4,656,770.94	2,078,466.56	2,578,301.38	1,258,648.45	1,108,074.33
August	4,571,658.59	217,085.19	4,354,573.40	2,064,590.75	2,289,982.64	1,195,268.67	1,496,009.04
September	4,410,061.84	225,088.86	4,184,972.88	2,705,853.95	2,479,119.03	1,182,118.57	1,318,265.33
October	4,072,267.43	234,050.89	3,838,576.54	1,517,484.27	2,321,092.27	1,271,174.73	1,564,984.43
November	4,083,972.42	216,655.30	3,867,317.12	1,784,443.35	2,082,873.77	1,159,623.71	1,129,047.42
December	4,098,200.92	201,470.30	3,896,730.62	1,741,311.07	2,155,419.55	972,338.83	924,035.93
1879—January	4,759,031.41	182,707.80	4,576,323.61	2,153,763.83	2,422,559.78	1,231,237.19	546,271.74
February	5,157,646.15	171,689.80	4,985,956.35	2,346,238.22	2,639,718.13	1,055,377.95	643,828.71
March	5,503,768.71	190,797.91	5,312,970.80	2,484,861.83	2,828,088.87	1,363,512.17	1,029,029.70
April	5,885,675.24	211,957.06	5,673,718.18	2,644,301.36	3,029,416.82	1,379,349.76	1,015,482.04
May	6,180,843.53	315,992.98	5,864,850.55	2,522,846.36	3,342,364.19	1,488,514.31	2,228,043.27
June	6,426,802 45	334,457.29	6,992,345.16	2,959,921.12	3,132,424.04	1,437,250.90	1,204,557.54
July	6,419,699.08	323,295.32	6,096,403.76	2,323,575.29	2,772,828.47	1,472,651.01	1,465,518.05
August	6,380,606.63	300,345.15	6,078,261.48	3,581,224.03	2,497,037.45	1,714.620.11	1,728,940.81
September	6,589,859.83	325,363.85	6,264,995.98	3,783,480.38	2,481,015.60	1,691,863.41	1,455,811.45
October	6,701,209.87	299,393.67	6,401,816.20	3,788,155.65	2,613,660.55	1,646,725.06	1,502,991.20
November	6,951,133.67	303,641.17	6,647,492.50	3,927,300.18	2,675,192.32	1,600,961.29	1,328,621.19
December	7,362,409.76	294,571.37	7,067,838.39	4,235,459.40	2,832,378.99	1,771,781.24	1,331,822.12
1880—January	7,735,257.38	295,517.60	7,439,739.78	4,436,788.55	3,002,951.25	1,832,963.04	1,145,194.98
February	8,187,012.49	322,568.93	7,864,443.56	4,602,286.49	3,262,157.07	1,607,663.89	1,178,111.92
March	8,621,097.49	351,130.35	8,969,967.14	4,811,894.33	3,458,072.81	1,815,133.31	1,396,037.88
April	9,662,354.59	388,558.16	9,273,766.43	5,846,536.60	3,427.259.83	1,739,297.37	723,794.73
May	10,306,078.79	454,193.73	9,851,885.06	6,361,320.05	3,490,565.01	1,552,240.91	975,061.26
June	11,266,771.77	477,431.60	10,789,340.08	7,397,131.89	3,392,208.19	1,781,937.29	848,339.08
July	12,039,010.00	475,446.56	11,563,563.44	8,125,241 25	3,438,332.19	1,890,161.44	1,095,528.25
August	12,749,623.28	462,987.28	12,286,636.00	8,635,394.80	4,651,241.20	1,904,452.70	1,177,448.42
September	13,618,276.03	382,398.71	13,236,327.32	9,287,193.94	3,949,133.38	2,075,105.26	1,115,184.71
October	14,020,877.32	391,331.55	13,629,545.84	9,448,615.77	4,180,930.07	1,999,487.98	1,598,285.06
November	14,656,891.55	341,262.67	14,315,628.88	10,038,824.08	4,231,804.80	1,859,991.50	1,064,146.39
December	15,369,758.67	361,184.83	15,008,573.48	10,913,283.49	4,095,290.35	1,987,283.54	1,207,928.35
1881—January	16,291,307.87	360,688.98	15,930,618.89	11,672,583.61	4,258,035.28	1,876,526.50	931,818.71
February	17,355,485.31	391,616.47	16,936,868.84	12,029,594.35	4,934,274.49	1,823,713.46	781,745.93
March	18,488,476.94	432,304.19	18,056,172.75	13,099,262.44	4,956,910.31	2,222,812.39	1,116,695.11
April	19,560,752.23	517,422.38	19,043,329.85	13,846,285.20	5,197,044.65	2,182,636.96	1,183,779.02
May	20,591,177.33	640,662.03	19,950,455.30	14,608,124.70	5,342,330.60	2,278,582.78	1,356,688.23
June	21,397,698.53	756,412.85	20,641,285.68	14,738,828.77	5,902,456.91	2,318,445.18	1,545,448.13
July	21,982,161.42	774,402.94	21,207,758.48	15,150,267.23	6,057,131.25	2,396,472.50	1,756,044.15
August	22,474,105.51	800,343.43	21,673,762.18	15,240,553.15	6,433,209.03	2,527,888.69	2,013,844.67
September	22,727,740.61	820,434.43	21,907,306.18	15,626,283.11	6,281,023.07	2,233,085.37	1,900,251.83
October	23,212,951.99	801,243.43	22,431,708.56	16,408,030.46	6,023,678.10	2,452,428.66	1,803,052.62
November	23,303,782.34	746,980.08	22,556,744.26	16,407,354.48	6,149,389.78	1,995,895.38	1,742,462.86
December	23,862,966.20	775,000.00	23,087,966.20	16.496,380.40	6,234,291.37	2,255,252.50	1,696,068.64
1882—January	24,243,382.26	762,111.53	23,481,270.73	17,788,245.97	5,693,024.76	1,984,325.23	1,547,945.23
February	24,704,933.81	765,000.00	23,939,933.81	18,541,340.52	5,831,402.36	2,062,742.98	1,601,191.43
March	25,663,298.81	887,210.88	24,776,087.93	19,039,760.73	5,736,327.20	2,305,538.30	1,453,354.46
April	26,519,252.22	993,150.92	25,526,101.30	19,963,183.00	5,562,918.30	2,145,965.63	1,381,093.10
May	27,518,619.53	1161,789.36	26,356,830.17	20,622,520.38	5,734,309.79	2,339,170.39	1,496,566.23
June	28,311,328.53	1344,852.60	26,966,475.93	21,282,495.62	5,683,980.31	2,419,934.81	1,796,712.55

Two oil men occupied a seat in a Bradford & Kinzua Railroad car a few days ago. One proposed to sell to the other a certain property below 646, with a well then drilling to be completed in a few days. The owner offered the property at $50,000. He replied to this, "I would take it if I thought my draft would be paid. But," he continued, "I'll take it at $45,000 whether the draft is paid or not."

THE Whale Well, lot 648, has been drilled through about twenty feet of a species of sandrock, containing but litttle oil. At least, this comes as reliable.

ORIGIN AND RELATIONS OF THE CARBON MINERALS.

IN a paper read before the New-York Academy of Sciences, Mr. J. S. Newberry makes some sensible remarks on the above subject. In treating of the evolved products, he says:

The gas-makers know that if their coal is permitted to lie for months or years after being mined, it suffers serious deterioration, yielding a less and less quantity of illuminating gas with the lapse of time. So coking coals are rendered dry, non-caking, and valueless for this purpose, by long exposure.

Carbureted hydrogen, olefiant gas, etc., are constant associates of the petroleum of springs or wells, and this escape of gas and oil has been going on in some localities, without apparent diminution, for two or three thousand years. We can only account for the persistence of this flow by supposing that it is maintained by the gradual distillation of the carbonaceous masses with which such evolutions of gas or of liquid hydrocarbons are always connected. If it were true that carbureted hydrogen and petroleum are produced only from the primary decomposition of organic tissue, it would be inevitable that at least the elastic gases would have escaped long since.

Oil-wells which have been nominally exhausted —that is, from which the accumulations of centuries in rock reservoirs have been pumped—and therefore have been abandoned, have in all cases been found to be slowly replenished by a current and constant secretion, apparently the product of an unceasing distillation.

In the valley of the Cumberland, about Burkesville, Ohio, one of the oil regions of the country, the gases escaping from the equivalent of the Utica shale accumulate under the plates of impervious limestone above, until masses of rock and earth, hundreds of tons in weight, are sometimes thrown out with great violence. Unless these gases had been produced by comparatively recent distillation, such explosions could not occur.

In opening a coal-mine on a hill-side, the first traces of the coal-seam are found in a dark stain in the superficial clay; then a substance like rotton wood is reached, from which all the volatile constituents have escaped. These appear, however, later, and continue to increase as the mine is deepened, until, under water or heavy covering of rock, the coal attains its normal physical and chemical characters. Here it is evident that the coal has undergone a long-continued distillation, which must have resulted in the constant production of carbonic acid and carbureted hydrogen.

A line of perennial oil and gas springs marks the outcrop of every great stratum of carbonaceous matter in the country. Of these, the most considerable and remarkable are the bituminous shales of the Silurian (Utica shale), of the Devonian (Hamilton and Huron shales), the Carboniferous, etc. Here the carbonaceous constituent (10 to 20 per cent.) is disseminated through a great proportion of inorganic material, clay and sand, and seems, both from the nature of the materials which furnished it—cellular plants and minute animal organisms—and its dissemination, to be specially prone to spontaneous distillation. The Utica shale is the lowest of these great sheets of carbonaceous matter, and that supplies the hydrocarbon gases and liquids which issue from the earth at Collingwood, Canada, and in the valley of the Cumberland. The next carbonaceous sheet is formed by the great bituminous shale-beds of the Upper Devonian, which underlie and supply the oil-wells in Western Pennsylvania. In some places, the shale is several hundred feet in thickness, and contains more carbonaceous matter than all the overlying coal strata. The outcrop of this formation, from Central New-York to Tennessee, is conspicuously marked by gas-springs, the flow from which is apparently unfailing.

Petroleum is scarcely less constant in its connection with these carbonaceous rocks than carbureted hydrogen, and it only escapes notice from the little space it occupies. The two substances are so closely allied that they must have a common origin, and they are in fact generated simultaneously in thousands of localities.

Natural paraffine is less abundant, and yet in places it occurs in considerable quantity. Asphalt is the common name for the solid residue from the evaporation and oxidation of petroleum; and large accumulations of this substance are known in many parts of the world, perhaps the most noted of all being that of the "Pitch Lake" of the Island of Trinidad; there, as everywhere else, the derivation of asphalt from petroleum is obvious and traceable in all stages. The asphalts, then, have a common history in this, that they are produced by the evaporation and oxidation of petroleum. But it should also be said that they share the diversity of character of petroleums, and the term asphalt represents a group of substances of which the physical characters and chemical composition differ greatly in

virtue of their derivation, and also differ from changes which they are constantly undergoing. I have found at Canajoharie, N. Y., in cavities in the lead-veins which cut the Utica shale, a hydrocarbon solid which must have infiltrated into these cavities as petroleum, but which, since the remote period when the fissures were formed, has been distilled until it is now *anthracite*. Similar anthracitic asphalt or asphaltic anthracite is common in the Calciferous sand-rock in Herkimer County, N. Y., where it is associated with, and often contained in, the beautiful crystals of quartz for which the locality is famous. Here the same phase of distillation is reached as in the coke residuum of the petroleum stills.

CONGLOMERATE.

GREEN is a pretty good mystifier.

THE Toles Well on lot 543 will settle the question of an extension of the Glade belt.

Mr. GEO. H. DIMIC believes the Clarendon rock and that of 646 are one and the same.

THE Clarendon & Garfield Railroad will be in running order, it is hoped, within forty days — at least a great share of the distance.

M. HULINGS, ESQ., is operating in the Duck Creek Valley, Ohio. A new well has just been reported, good for thirty barrels a day.

IF the *isthmus* which constitutes the new field should suddenly appear very much watered, like old Buck's brandy, there would be some loud lamenting in the latitude.

THE trade in the northwestern States was never so lively as at the present time. Thousands of barrels of refined oil find sale where hundreds answered the purpose a few years ago.

THE question as to whether all the facilities for storing and handling the Cherry Grove production contemplated by the Warren and Union Pipe Lines, together with the McCalmont Oil Co., will be required is a matter admitting of some doubt, and it is already hinted that the construction of some large tanks will be postponed for a season at least.

ARABI BEY seems to have his eye on the oil trade. He is evidently on the "bull" side of the market, judging from the manner in which he is said to have made use of petroleum in the destruction of Alexandria. Should he prosecute the scheme throughout all Egypt, he will certainly use up a large portion of the surplus production of this country. It is an ill wind, etc.

RUNS, DELIVERIES, STOCKS.

TABLE showing the May and June Pipe Line Runs and shipments, with stocks, on June 30th, 1882—official.

DISTRICT.	RECEIPTS, Pipe.	BARRELS, May.	BARRELS, June.
Bradford	United		
Tidioute & Titus'e,	"		
Lower Country	"		
Monongahela	"		
Total	"	2,339,170.39	2,419,934.81
Bradford	Tidewater	252,019.93	265,911.16
Warren	Union Oil Co.	9,501.60	63,466.54
Titusville	Octave Oil Co.	44,579.06	4,473.62
Oil City	Charley Run	445.27	000,750.00
Shaffer	Shaffer Run	534.00	000,452.80
Franklin	Franklin Pipe	6,224.60	6,917.76
Warren	Warren Pipe		103,779.82
Total all Lines		2,402,819.49	2,865,686.51
Average per day June			95,522,95
Average per day May			85,563.70
Average per day April			80,093.98
Average per day March			83,724.96
Average per day February			83,547.40
Average per day January			71,855.35

Deliveries.

DISTRICT.	PIPE.	BARRELS.	BARRELS.
All Points	United	1,496,566.23	1,796,712.55
Warren	Union Oil Co.	28,632.54	047,454.03
Titusville	Octave	5,498.19	004,038,70
Franklin	Franklin Pipe	6,110.00	003,749.85
Shaffer	Shaffer Run	725.01	000,523.93
Oil City	Charley Run	92.62	000,544.72
Bradford	Tidewater	247,634.56	247,250.84
Warren	Warren Pipe		115,411.31
Total deliveries		1,785,259.15	2,215,685.93
Total Runs			2,865,686.51
Am't of Runs in excess of Shipm'ts,			6,50,000.58

DISTRICT.	PIPE.	*Net Stocks May 31.* BARRELS.	*Net Stocks June 30.* BARRELS.
Oil City	Charley Run	3,733.73	003,625.00
Bradford	Tidewater	2,275,286.08	2,307,014.14
All Districts	United	26,356,830.17	26,966,475.93
Shaffer	Shaffer Run	25,845.33	026,250.72
Warren	Union Oil Co.	151,750.60	165,840.67
Titusville	Octave Oil Co	8,959.60	10,151.98
Franklin	Franklin Pipe	11,310.00	16,152.24
Warren	Warren Pipe		45,006.79
Total June			29,540,517.47
Total May			28,833,715.51
Total April			27,969,884.48
Total March			27,252,806.93
Total February			26,414,274.36
Total January			25,788,071.79
Increase June			706,801.96
Increase May			863,631.03
Increase April			717,077.55
Increase March			838,532.57
Average increase per day, June			23,560.15
Average increase per day, May			27,859.06
Average increase per day, April			23,902.58
Average increase per day, March			27,049.44
Average increase per day, February			22,364.00
Average increase per day, January			12,174.73

THE roads leading from the P. & E. Railroad from Clarendon and Tiona and Farnsworth siding are nicely planked so that teaming is made quite easy.

CRUDE OIL MARKET.

MONTHLY AND YEARLY AVERAGE PRICE OF PIPE LINE CERTIFICATES OR CRUDE OIL AT THE WELLS, IN BARRELS OF 42 GALLONS EACH.

A. D.	Jan. Ave'age	Feb. Ave'age	March Ave'age	April Ave'age	May Ave'age	June Ave'age	July Ave'age	Aug. Ave'age	Sept. Ave'age	Oct. Ave'age	Nov. Ave'age	D'emb'r Ave'age	Yearly Avrges.
1859.	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	20.00	20.00	20.00	20.00	20.
1860.	19.25	18.00	12.62½	11.00	10.00	9.50	8.62½	7.50	6.62½	5.50	2.75	2.75	9.
1861.	1.00	1.00	1.00	.62½	.50	.50	.50	.25	.20	.10	.10	.10	.
1862.	.10	.15	.22½	.50	.85	1.00	1.25	1.25	1.25	1.75	2.25	2.25	1.
1863.	2.25	2.50	2.62½	2.87½	2.87½	3.00	3.25	3.37½	3.50	3.75	3.85	3.95	3.
1864.	4.09	4.37½	5.50	6.56	6.87½	9.50	12.12½	10.12½	8.87½	7.75	10.00	11.00	9.15½
1865.	8.25	7.50	6.00	6.00	7.37½	5.62½	5.12½	4.62½	6.75	8.12½	7.25	6.50	6.87
1866.	4.50	4.40	3.75	3.95	4.50	3.87½	3.00	3.75	4.50	3.39	3.10	2.12½	3.59
1867.	1.87½	1.85	1.75	2.07½	2.35	1.90	2.62½	3.15	3.40	3.55	2.50	1.87½	2.74
1868.	1.95	2.00	2.55	2.82	3.75	4.50	5.12½	4.57½	4.00	4.12½	3.75	4.35	3.41½
1869.	5.75	6.95	6.00	5.70½	5.35	4.95	5.37½	5.57½	5.50	5.50	5.80	5.12m	5.63¾
1870.	4.52½	4.52½	4.45	4.22½	4.40	4.17½	3.77½	3.15	3.25	3.27½	3.22½	3.40	3.89
1871.	3.82½	4.38	4.25	4.01	4.60	3.85½	4.79	4.66	4.65	4.82½	4.25	4.00	4.34
1872.	4.92½	3.80	3.72½	3.52½	3.80	3.85	3.80	3.58½	3.25	3.15	3.83½	3.32½	3.64
1873.	2.60	2.20	2.12½	2.30	2.47½	2.22½	2.00	1.42½	1.15	1.20	1.25	1.00	1.83
1874.	1.20	1.40	1.60	1.90	1.62½	1.32½	1.02½	.95	.95	.85	.55	.61½	1.17
1875.	1.03	1.52½	1.75	1.36½	1.40	1.26½	1.09	1.13	1.33	1.32½	1.44	1.55	1.35
1876.	1.80	2.00	2.01	2.02¼	1.90½	2.01¾	2.24½	2.71	3.81	3.37½	3.11	3.73	2.56¼
1877.	3.53¼	2.70	2.67½	258	2.24	1.94⅝	2.07½	2.51	2.38	2.56¾	1.91	1.80	2.42
1878.	1.43	1.65¼	1.59	1.37½	1.35¼	1.14	.98¾	1.01⅜	.86½	.82½	.89⅜	1.16	1.19
1879.	1.03	.98	.86¼	.78½	.76	.68⅜	.69⅞	.67⅛	.69½	.88½	1.05⅝	1.18⅛	.85⅞
1880.	1.10¼	1.03⅛	.88¼	.78	.80	1.00	1.06¼	.91	.96	.96⅞	.91⅞	.91⅝	.94½
1881.	.95½	.90⅜	.83⅜	.86¾	.81⅞	.81¼	.76⅞	.78⅝	93.3–16	.94¾	.83	.84	.85¾
1882.	.83¼	.85¾	.80⅞	.78½	.69⅞	.54½	. . .	. . .	. . .	. . .	. . .	. . .	. . .

JUNE OFFICIAL QUOTATIONS FOR CRUDE.

THE following table shows opening, highest, lowest, and closing quotations at the Oil Exchange each day.

	Opening.	Highest.	Lowest.	Closing.	Avg.
1	54⅞	61⅞	54⅞	. .	58¾
2	60¼	64⅛	59¾	. .	42½
3	56¼	60⅝	56¼	. .	58½
5	58	59⅜	57¼	. .	58¼
6	57⅛	58⅛	56½	. .	57¼
7	57¼	58	58⅛	. .	58
8	57⅛	57⅛	56	. .	56½
9	55⅞	56¼	54⅛	. .	55¼
10	54⅛	55¾	52⅝	. .	54¼
15	53¾	54⅜	52⅛	. .	53½
13	52⅞	53⅞	52⅛	. .	53
14	53¾	55⅜	52⅞	. .	53⅛
15	51½	52¾	51⅜	. .	52⅛
16	51	53⅜	51	. .	52¼
17	52½	53¾	52½	. .	53⅛
19	52½	53⅛	52½	. .	52¾
20	52½	52¾	52	. .	52⅜
21	52¼	52¾	51¾	. .	52¼
22	52¾	53½	52½	. .	53
23	53¼	53⅞	52¾	. .	53½
24	53⅞	53⅞	52¾	. .	52¾
26	52⅞	53	52½	. .	52¾
27	52⅝	53⅜	52¼	. .	52¾
28	52	54	52⅜	. .	52¼
29	52¾	53⅜	52⅝	. .	53
30	52⅛	53⅜	52¾	. .	53
Grand Average,					54½

JUNE OFFICIAL QUOTATIONS FOR REFINED.

THIS table gives the daily quotations for refined oil at the principal foreign as well as domestic ports.

June.	N. Y. cts.	Philadelphia. cts.	Baltimore. cts.	Antwerp. fr'c.	Bremen. m'rk.	London. pence.
1	7¼	8⅛	7¼	17¾	6.95	5⅝
2	7½	7⅜	7⅜	17¾	6.95	5⅝
3	7½	7⅜	7⅜	17¾	6.95	5⅝
5	7⅜	7⅜	7⅜	17¾	6.95	5⅝
6	7⅜	7⅜	7⅜	17¾	6.95	5⅝
7	7½	7⅜	7½	17¾	7.00	5⅝
8	7⅜	7⅜	7½	17¾	7.00	5⅝
9	7⅜	7⅜	7½	17¾	7.00	5⅝
10	7⅜	7⅜	7¼	17¾	7.00	5⅝
12	7⅜	7⅜	7¼	17¾	7.00	5⅝
13	7¼	7⅜	7¼	17¾	7.00	5⅝
14	7⅜	7⅜	7¼	17¾	7.00	5⅝
15	7⅜	7⅜	7¼	17¾	7.00	5⅝
16	7⅜	7⅜	7¼	17¾	6.90	5⅞
17	7¼	7⅜	7¼	17¾	6.90	5⅜
19	7¼	7⅜	7¼	17¾	6.90	5½
20	7⅜	7¼	7¼	17¾	6.85	5⅝
21	7⅜	7¼	7¼	17¾	6.85	5⅝
22	7⅜	7¼	7¼	17¾	6.85	5⅝
23	7⅜	7¼	7¼	17¾	6.85	5⅝
24	7⅜	7¼	7¼	17¾	6.85	5⅝
26	7⅜	7¼	7¼	17¾	6.85	5⅝
27	7⅜	7¼	7¼	17¾	6.90	5⅜
28	7⅜	7¼	7¼	17¾	6.90	5⅜
29	7⅜	7⅜	7¼	17¾	6.85	5⅝
30	7⅜	7⅜	7¼	17¾	6.85	5⅝

WHILE Cherry Grove was attracting the attention of nearly everybody about the 1st inst. with its gushers, the Thomas Farm, east of Bolivar Village, Allegany Field, turned out two wells that yielded 500 barrels each the first day.

MAGEE & HORTON have strung their tools and will drill no more in that section till Cherry Grove has become thoroughly defined. It may not require as much time to accomplish this as some would have us believe.

PRODUCTION TABLE.

SHOWING THE TOTAL DAILY NET YIELD OF THE PENNSYLVANIA OIL FIELD FROM SEPTEMBER, 1859, TO JUNE 30TH, 1882, IN BARRELS OF 42 GALLONS EACH.

Years.	Jan.	Feb.	Mar.	April.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.	Totals.
1859	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	10	15	18	28	2,173
1860	30	50	89	215	500	1,000	2,000	2,500	3,000	3,500	2,000	3,000	547,439
1861	3,201	4,041	4,800	5,400	6,000	6,100	7,100	8,500	7,000	5,150	5,514	6,716	2,119,045
1862	6,000	5,300	7,400	8,000	9,400	9,000	8,500	11,000	13,000	10,565	8,053	7,238	3,153,183
1863	6,200	6,400	7,000	5,500	6,000	7,603	7,022	8,100	9,200	7,120	9,500	10,260	2,667,543
1864	8,100	6,300	4,500	5,000	7,000	5,100	5,600	5,700	7,180	5,545	10,100	10,320	2,215,150
1865	5,900	5,800	5,000	7,500	8,000	8,000	7,400	6,350	6,400	6,800	7,600	9,350	2,560,200
1866	9,200	9,100	5,000	7,100	8,100	9,500	9,350	9,440	12,000	10,400	11,000	11,165	3,385,105
1867	10,900	8,100	9,000	10.100	10,500	9,000	10,100	10,000	10,100	7,660	9,155	8,313	3,458,113
1868	8,200	9,400	8,100	9,300	11,000	12,400	13,000	11,800	10,250	8,225	7,580	7,150	3,540,670
1869	8,100	8,500	10,000	11,000	13,000	13,000	13,560	13,000	13,500	12,500	11,200	10,625	4,186,475
1870	11,348	11,802	11,509	12,400	15,990	13,400	13,800	15,950	18,203	18,000	17,061	15,990	5,308,046
1871	13,500	13,300	13,082	12,950	13,054	13,882	14,900	15,866	15,555	15,889	15,599	15,841	5,278,072
1872	17,943	17,894	15,680	16,221	17,402	12,140	16,933	17,440	16,598	18,450	25,942	20,630	6,505,774
1873	20,550	21,460	21,830	22,260	24,632	26,361	23,406	30,900	32,500	31,343	33,584	34,680	9,849,508
1874	32,800	30,940	29,760	28,104	29,442	31,222	33,987	32,000	29,461	29,944	29,231	28,101	11,102,114
1875	27,900	26,509	26,012	23,009	23,000	23,805	24,991	23,940	23,800	23,900	23,821	23,594	8,948,749
1876	23,102	25,440	23,560	23,800	24,628	24,400	24,890	25,300	25,900	26,400	26,500	25,900	9,142,940
1877	26,930	27,560	28,860	32,060	36,000	37,440	39,210	42,100	41,321	41,200	39,900	40,120	13,230,330
1878	39,200	39,900	39,200	40,100	41,111	40,820	41,200	42,900	43,999	44,480	45,200	43,900	15,272,491
1879	44,000	43,830	47,960	50,810	52,911	55,600	56,911	59,940	61,498	60,980	58,750	58,231	19,835,903
1880	59,982	63,890	66,215	68,063	72,080	73,104	73,794	74,980	71,941	77,491	76,112	74,080	26,086,692
1881	73,030	69,060	73,900	75,245	79,000	82,460	81,900	79,100	78,231	77,971	77,892	76,642	28,136,353
1882	75,028	74,910	74,751	76,690	78,601	80,469	. . .	. . .	. . .	. . .	. . .	. . .	. . .

Total twenty-three years to December 31st, 1881, ... 186,532,067

WELLS COMPLETED.

TOTAL NUMBER WELLS COMPLETED EACH MONTH IN THE YEARS AND MONTHS NAMED.

A. D.	Jan.	Feb.	March.	April.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.	Total.
1870	131	131	114	135	164	182	161	156	135	144	112	79	1,644
1871	98	68	70	81	95	150	139	116	125	186	161	181	1,470
1872	48	118	98	122	130	98	131	117	96	101	41	101	1,201
1873	100	105	105	110	106	180	112	116	116	111	108	95	1,364
1874	108	111	108	110	112	113	124	102	108	117	112	116	1,341
1875	184	186	194	180	169	194	208	206	208	215	213	228	2,385
1876	235	236	248	207	200	258	243	274	223	270	278	271	2,943
1877	275	249	296	264	336	598	314	254	332	460	398	391	4,167
1878	279	238	202	411	468	278	210	180	176	232	241	160	3,075
1879	144	136	221	263	395	336	335	280	269	229	225	268	3,101
1880	311	238	358	494	435	315	339	359	359	360	334	309	4,211
1881	232	218	201	310	412	371	348	335	314	302	347	405	3,795
1882	357	359	389	449	457	328	. . .	. . .	. . .	. . .	. . .	. . .	. . .

PRODUCTION BY FIELDS FOR THE MONTH OF JUNE, PER DAY.

District.	*Month.*	*Barrels.*	*Decline.*	*Increase.*
Bradford	June	44,018	2,865	. .
Warren	June	8,421	. .	5,141
Lower Country	June	5,810	190	. .
Allegany	June	22,220	218	. .
Totals		80,469	3,273	5,141

Increase over May 1,868

VARIOUS MARKET QUOTATIONS JULY 5.

Empty oil barrels in New-York,	$1.38
110° Fire test refined oil,	7½c. gal.
120° Fire test water white, 9¾c., standard white,	8¾c.
130° Fire test water white,	10c.
150° Fire test water white,	10¼c.
Naphtha, crude, in cargo lots, 68°,	6½c.
Naphtha, crude, 70°,	7½c.
Gasoline, 86°,	13c.

Oil, Paint and Drug Reporter: "It is asserted as evidence of the wonderful skill acquired by the oil-well driller that 'he can tell how near the bit is to the oil-bearing sand by the little particles that cling to the bit or by the few grains of gravel washed out of the bailings'—that is to say he knows the sand-rock when he sees it. Mysterious!"

Yes, it is mysterious, and the festive driller is supposed to know just how much jar he has on all the time, and not a few of them have been known to put their time in running slack rope into the hole. Drillers know as little about the character of the rocks they drill through as foreigners know about the lay-out of a Cherry Grove boarding-house. At least, when questioned their answers indicate this.

SHIPMENTS.

Shipment of Crude and Refined, in Barrels of 42 Gallons each, reduced to Crude Equivalent out of the Producing Regions in the years named:

Year.	January.	February.	March.	April.	May.	June.	July.	August.	September.	October.	November.	December.	Totals.
1859											500	1,200	1,700
1860	900	1,200	2,500	4,640	11,000	21,000	58,500	64,300	79,000	78,400	63,400	38,400	423,240
1861	54,800	49,620	68,410	95,300	184,000	189,000	200,400	210,000	263,000	184,000	76,321	75,282	1,650,133
1862	98,212	93,101	103,762	201,430	256,320	385,211	375,440	376,311	401,210	406,500	213,611	190,463	3,141,521
1863	171,132	104,928	148,388	288,994	456,211	428,282	213,413	281,400	398,211	264,441	281,340	206,211	3,242,951
1864	148,324	101,431	96,486	132,486	125,218	221,386	110,490	101,218	228,430	220,386	201,441	154,765	1,842,001
1865	121,386	94,803	103,201	122,222	140,301	338,403	184,231	115,821	231,402	228,321	215,262	204,779	2,100,132
1866	132,200	121,320	180,206	260,231	280,320	390,260	200,410	290,210	390,431	318,616	210,016	236,701	3,010,921
1867	123,460	115,321	165,230	250,830	300,210	360,311	210,410	260,310	384,206	300,102	280,013	132,807	2,883,210
1868	150,220	144,201	200,410	280,430	310,408	400,046	390,402	320,210	480,306	260,240	280,260	265,377	3,482,510
1869	200,026	160,320	240,210	260,406	340,318	400,601	310,260	250,214	450,200	480,860	280,210	249,896	3,623,521
1870	360,933	312,910	354,400	390,003	407,908	418,516	410,707	516,679	542,217	557,624	519,780	444,254	5,235,931
1871	437,691	347,718	383,890	389,147	587,375	501,754	541,137	528,134	551,075	505,071	480,977	410,822	5,664,791
1872	476,966	407,606	276,220	428,512	510,417	529,228	591,238	621,954	541,607	607,468	477,940	430,786	5,899,942
1873	573,124	527,440	668,374	708,191	768,176	696,414	814,449	864,768	952,955	1,010,852	959,589	955,443	9,499,775
1874	843,663	501,220	518,246	803,409	899,027	815,413	940,281	793,865	1,014,570	543,341	546,117	602,348	8,821,500
1875	435,095	327,776	693,918	729,581	681,679	745,986	904,537	882,089	1,109,392	871,917	671,066	871,902	8,924,938
1876	677,289	519,193	623,762	603,037	646,150	921,862	1,228,530	1,203,402	1,154,549	524,190	871,496	1,190,983	10,164,443
1877	743,461	484,904	913,919	903,526	1,234,324	1,391,124	1,096,951	1,425,943	1,563,797	1,268,971	1,205,634	600,019	12,832,578
1878	775,791	774,234	741,512	846,636	960,894	1,135,119	1,330,454	1,655,651	1,434,225	1,747,390	1,281,410	992,688	13,476,000
1879	663,998	702,729	973,879	1,136,188	1,331,469	1,369,314	1,625,035	1,808,238	1,627,120	1,662,269	1,453,645	1,542,585	15,896,469
1880	1,650,409	1,395,151	1,613,371	842,268	1,095,259	975,083	1,231,611	1,304,129	1,252,635	1,665,933	1,226,030	1,335,613	15,587,447
1881	1,061,617	915,028	1,276,740	1,348,398	1,563,436	1,729,697	1,925,532	2,214,877	2,031,950	2,080,467	2,069,641	2,014,655	20,232,038
1882	1,817,973	1,829,779	1,729,237	1,751,294	1,843,455	226,117,274							

FURTHER COMMENDATIONS.

The Petroleum Age, a monthly magazine devoted to the interests of the petroleum trade, has reached its seventh number with the May issue. It is exceedingly well conducted, and a handsome specimen of typographic neatness and taste. If not heartily sustained by the producers it is certainly deserving of their unstinted support.—*Venango Spectator.*

The Petroleum Age is devoted to the petroleum trade and is a very interesting and valuable publication. We believe this publication fills an actual want, and, consequently, will succeed.—*Potter Enterprise.*

The Petroleum Age for the month appears with its usual large quantity of valuable matter pertaining to petroleum and its products. It has also treated itself to a new cover, designed and engraved by Matthews, Northrup & Co., of Buffalo. The Age, as improved, takes rank with the best of statistical and descriptives, and deserves well at the hands of publication buyers.—*Jamestown Leader.*

The May number of the Petroleum Age was issued last week, and was ahead of all its previous issues in several particulars. This number is embellished with a finely engraved cover, illustrating some of the most familiar implements and scenes of the oil business. The cover of the title page is composed of accurate representations of sucker-rods. The contents of the number are of the same varied and interesting character as usual. It is difficult to see how any body at all interested in the oil business, unless he is in a position to get the same information otherwise (which is hardly possible), would like to do without the Age when once convinced of its merits. And very few do.—*Bradford Sunday News.*

TABLE SHOWING TOTAL PRODUCTION OF CRUDE PETROLEUM IN PENNSYLVANIA AND NEW-YORK OIL FIELDS, AND CONSUMPTION.

From 1859 to 1881, Inclusive.

Year.	Oil Creek Division. Bbls.	Pithole District Bbls.	Tid'ute and Fagundas District Bbls.	Central All'g'ny Divis'n. Bbls.	Butler, Armstr'g & Lower Allegany Bbls.	Clarion Division Bbls.	Bradford Division Bbls.	Bullion District Bbls.	Warr'n Div. Bbls.	Beaver Div. Bbls.	Alleg. Co., N. Y., Div. Bbls.	Yearly Total. All Districts. Bbls.	Consumption. Bbls.	Yearly Average Price.
1859	2000	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	2000	500	20.00
1860	500000	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	500000	300500	9.60
1861	2113609	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	2113609	1280000	.49
1862	3056690	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	3056690	1472000	1.05
1863	2611309	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	2611309	1992800	3.15
1864	2216109	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	216109	1946620	9.87½
1865	1585200	912500	20500	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	2518200	2238610	6.59
1866	2302700	1095000	490000	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	3887700	2574401	3.74
1867	2393300	814000	839900	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	4047200	2960561	2.41
1868	2672617	445500	729000	26000	. . .	. . .	. . .	. . .	. . .	. . .	. . .	3873117	3404645	3.62½
1869	3462500	365000	535000	22500	45000	. . .	. . .	. . .	. . .	. . .	. . .	4430000	3716341	5.63¾
1870	2745528	173585	723838	713150	918644	. . .	. . .	. . .	. . .	. . .	. . .	5274745	4562642	3.89
1871	2040263	182054	697887	1083386	1091458	310293	. . .	. . .	. . .	. . .	. . .	5405341	5178038	4.34
1872	1429685	145065	847199	881140	2658080	829079	. . .	. . .	. . .	. . .	. . .	6790248	5954742	3.64
1873	1094389	119864	895983	851934	4402563	2526231	. . .	. . .	. . .	. . .	. . .	9890964	7847953	1.83
1874	734247	55770	373325	564978	5160265	3921267	. . .	. . .	. . .	. . .	. . .	10809852	7875145	1.17
1875	504639	35130	351407	343905	4712702	2821214	18509	. . .	. . .	. . .	. . .	8787506	9256416	1.35
1876	611884	37450	354284	333640	4755623	2377700	382768	64220	51337	. . .	. . .	8968906	10414877	2.56¼
1877	734858	60380	312700	474262	5431072	3021120	1465451	1306342	151371	62085	. . .	13019641	11977107	2.42
1878	686948	60000	308780	363710	4552815	2276408	6482400	505265	108300	92490	. . .	15437116	13783672	1.19
1879	389400	36500	227900	258652	2876787	1438342	14268945	289591	45550	82100	. . .	19913767	16851222	.85⅞
1880	335342	36500	168542	166143	1737969	868984	22343202	146672	91655	102956	. . .	25997965	18228905	.94½
1881	293504	31938	146474	145374	1394706	844442	22817975	128338	438000	102956	607106	26950813	21263740	.85¾
	34516721	4706236	7022719	6228774	38737684	21235080	67779250	2440428	886213	442587	607106	186502798	155081437	3.92¼

RECAPITULATION.

Production by Fields.—1859 to 1881, Inclusive.

Oil Creek Division, including Shamburg, Pleasantville and Enterprise,	34,516,721	Clarion County,	21,235,080
Pithole Division, including Henderson, Morey and Ball Farms,	4,706,236	Bradford Division, including Elk County,	67,779,250
Central Allegany, including Scrubgrass and West Hickory,	6,228,774	Bullion Field,	2,440,428
Butler and Armstrong Counties, Lower Allegany Division,	38,737,684	Warren, Stoneham and Clarendon,	886,213
Tideoute Division, including Economite, Henderson, Farms, etc.,	7,022,719	Beaver (Smith's Ferry) Division,	442,587
		Allegany Division,	607,106
		Total all Divisions, Production,	186,502,798
		Total Consumption,	155,181,437
		Difference,	31,421,361

This difference includes, of course, all available stocks on hand, all sediment and worthless surplus, and the amount estimated for shrinkage, which would reduce the available stocks to the figure given elsewhere.

This table is made to show the amount of oil saved and used. It differs but little with the first production table published in the AGE, and was compiled by a producer who possesses valuable records

Area of Developed Territory.

Venango County, Pa	25,600 acres.	Clarion County, Pa.	19,200 acres.
Crawford County, Pa.	6,400 "	Butler County, Pa.	28,000 "
Forest County, Pa.	1,920 "	McKean and Cattaraugus	63,800 "
Warren County, Pa.	11,000 "	Allegany	18,360 "
Armstrong County, Pa.	5,120 "		
Total			179,400 acres.

This covers all territory productive, whether light or small, as yet discovered in the States of Pennsylvania and New-York.

SEVENTEEN years ago, it is stated, a gentleman named P. K. Shepherd, of Olean, secured a number of oil leases in the immediate vicinity of Richburg, N. Y. Among the leases secured was one of the Reed Farm, now owned and sub-leased by the McCalmont Oil Company. Shepherd's leases were supposed to have expired for want of fulfillment of contract on his part. But Mr. Shepherd does not view the case in that light. He claims that his contract gives him ninety-nine years in which to perform certain acts, and do those things necessary to the development of the territory. The McCalmont Company thinks this a poor pretext for a title, and a law case of some importance is therefore to result. The parties were all in Buffalo during the week ending the 8th inst., and by agreement arguments in the case were postponed till August 7th next.

THE MAPS ON NEXT PAGES.

WITH these maps the circuit of Warren County's great oil basin is made complete. At one view the whole county, twenty-four miles in width and eighteen miles in length, from north to south, is seen. At Tidioute, the ancient seat of oil intelligence, is seen the locality of the Economite oil development which is now almost entirely extinct. South of the ring is pointed out the character of the territory by a group of duster signals. Then on the northeast corner can be seen a few more of this class, together with a couple drilling. One of these, the Toles Well, on lot 453, is said to be entirely dry, having been drilled below the point where oil should be found.

The following is an index to the maps:

Lot 590, southeast corner Mahoopany, No. 2 medium.

Lot 586, three gas wells, C, A and D, corner.

Lot 611, Mahoopany, No. 1, started at 2,000 barrels.

Lot 619, Murphy, two wells, started at 2,000 barrels.

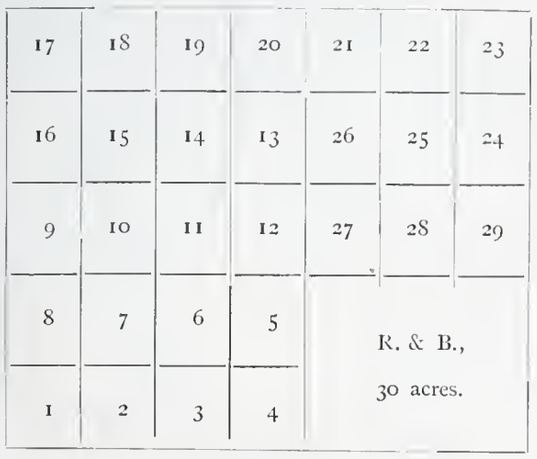
Lot 635, A. Sheidemantle, subdivision, No. 12, 15,000.

Lot 635, southeast corner, Brenneman & Reed, started at 1,000.

635 is divided into five acre-lots, and a well will be drilled on each.

Cramer, on 20, Nickle & Co., on 9, 1,000 barrels, Andrews, on 22, are all good producers.

The lot is divided as follows:



1.—Anchor Oil Co., No. 1.
2.— " " " 2.
3—Barry & Kelly.
4.—Stafford & Barnsdall.
5.—Zeigler & Smith.
6.—Vandergrift & Wright.
7.—Goldsborough.
8.—Merrick & Harris.
9.—Nickle Oil Co.
10.—Clark & Goldsborough.
11.—A. P. Tanner.
12.—A. Sheidemantle.
13.—Caldron Bros.
14.—W. Alshouse.
15.—N. C. Clark & Co.
16.—Sam. Crosby.
17.—Janes & Johnson.
18.—Pemberton & Nutting.
19.—J. C. Lineman.
20.—C. H. Cramer.
21.—Richardson & Co.
22.—Thompson & Andrew.
23.—Babcock & Co.
24.— " "
25.—S. Comfort.
26.—Valiant Oil Co.
27.—C. Miller.
28.—C. Miller.
29.—C. Miller.

Lot 634, southwest corner Union Oil Co., started 1,000 barrels.

Lot 647, Anchor Oil Co., two wells, large.

Lot 633, northwest corner, Murphy and others, mystery.

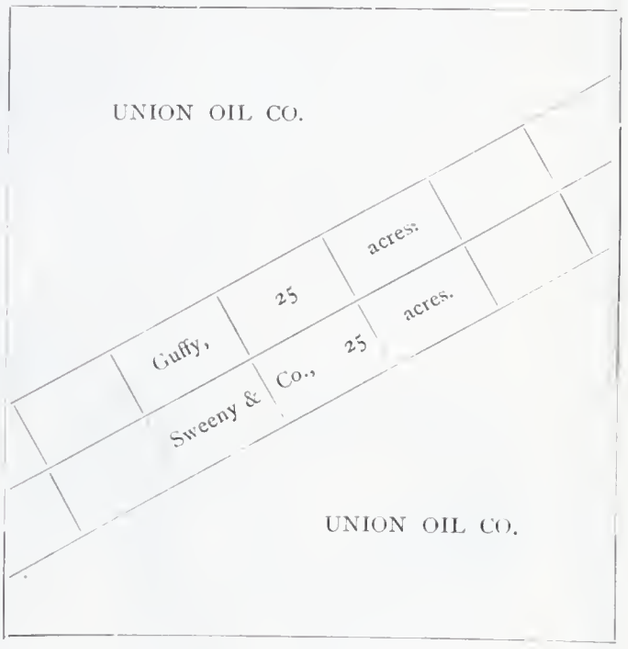
Lot 646, old mystery and two others just in.

Lot 659, anchor mystery, about centre of lot.

Lot 645, Kenin Well, at sand.

Lot 536, Payne and others, subdivided.

Lot 618, Grace, and Union Oil Co., 125 acres, divided as follows:



Lot 612, Anchor Oil Co., subdivided 5-acre lots.

Lot 658, Anchor Oil Co., subdivided 5-acre lots.

Lot 648, Whale Oil Co., dry at centre of east line.

Lot 657, Jennings, 25 acres southeast corner.

Lot 657, Union Oil Co. and others.

Lot 672, Goldsboro, well just above the figure 2. This lot is subdivided 5-acre lots.

Lot 671, Green, mystery southwest corner.

Lot 668, Landsrath, duster.

Lot 745, unknown, duster.

Left page lot 573, Shaw, dry.

Left page lot 543, Brown & Marsh, drilling.

Left page lot 425, Toles, supposed dry.

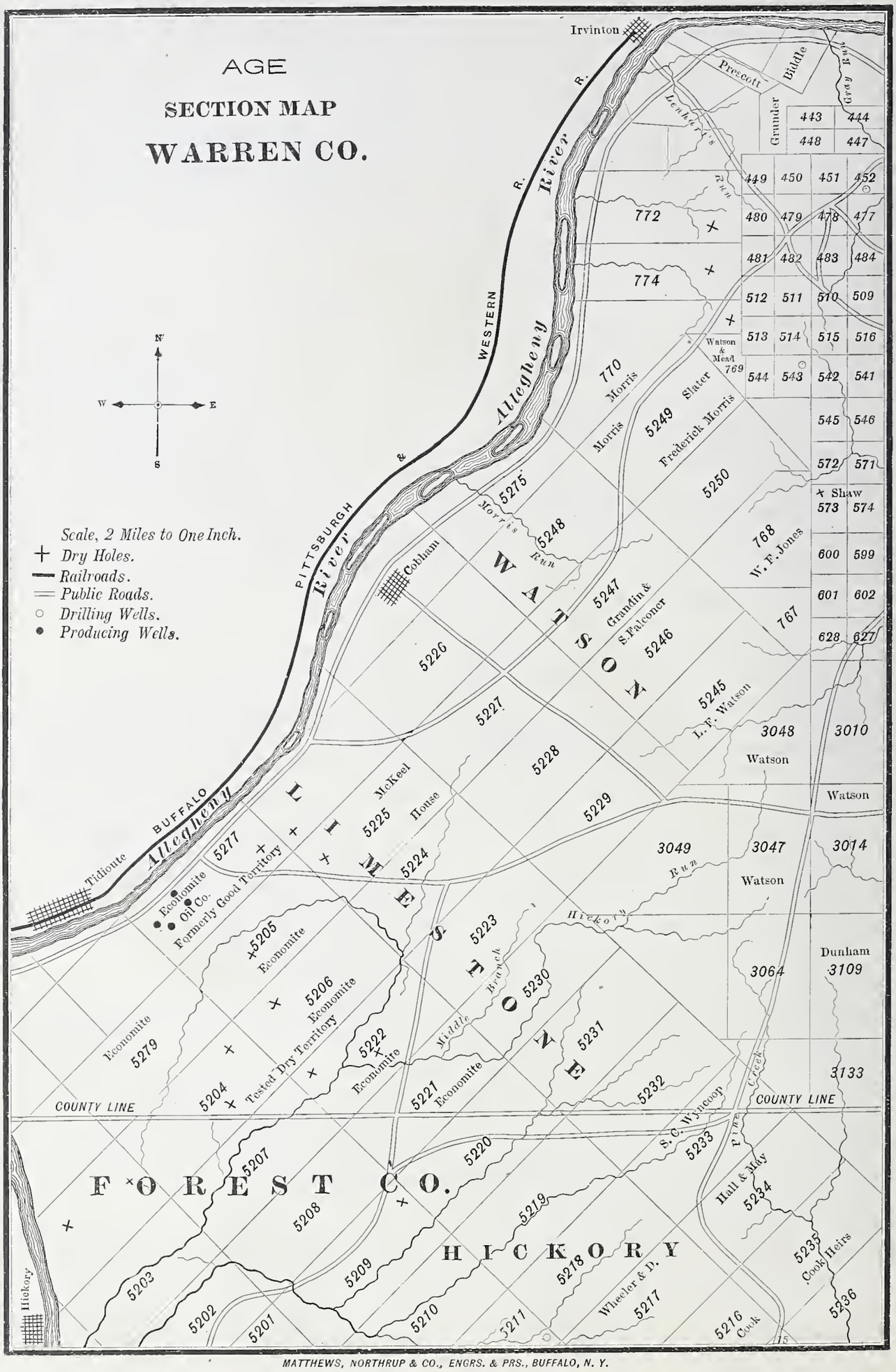
Tracts 772, 774 and 770, Dingley, dusters; drilled ten and twelve years ago.

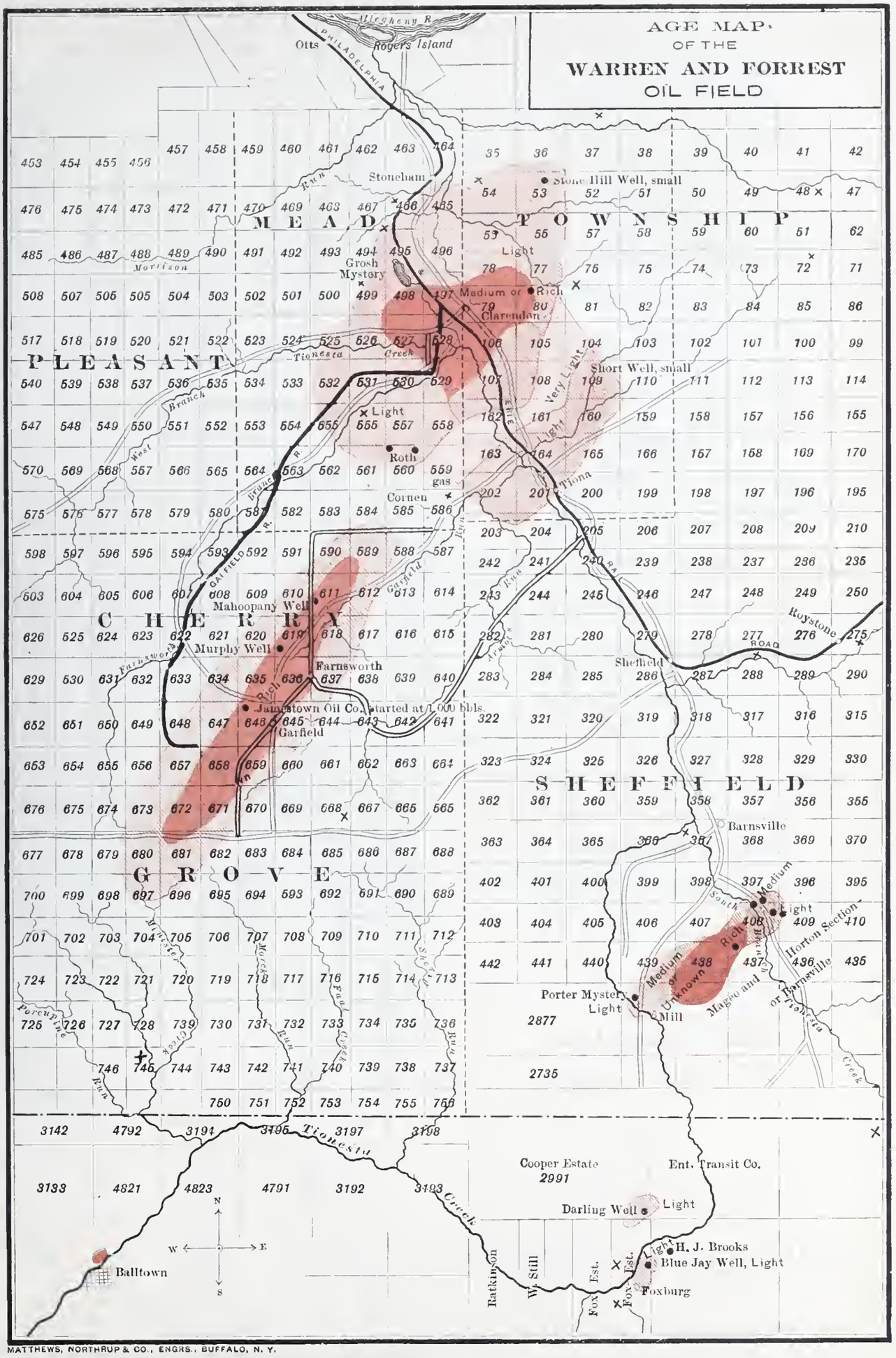
Warrant 5,211, Tionesta Oil Co., drilling.

Warrant 5,209, unknown, duster.

Warrants 5,222 5,206, 5,205, 5,204, etc., dusters, by Economite Co. and others drilled in 1869 and 1870.

A GENTLEMAN of Oakland, California, has invented a process for the manufacture of belting from the entrails of sheep. The material is cut into fine strings and woven together, after undergoing a process of cleaning in brine. It is said that the belting is the best in the market.


AGE
SECTION MAP
WARREN CO.
Scale, 2 Miles to One Inch.
Dry Holes.
Railroads.
Public Roads.
Drilling Wells.
Producing Wells.
Irvinton
Prescott
Biddle
Gray Run
Grunder
Lenhert's Run
Allegheny River R.
PITTSBURGH & WESTERN R.
Watson & Mead
Morris
Slater
Frederick-Morris
Shaw
W. F. Jones
Cobham
Morris Run
WATSON
Grandin & S. Falconer
L. F. Watson
Watson
Dunham
Hickory Run
Middle Branch
Tidioute
BUFFALO Allegheny
Economite Oil Co.
Formerly Good Territory
McKeel House
LIMESTONE
Economite
Tested Dry Territory
COUNTY LINE
S. C. Wyncoop
Tiona Creek
Hall & May
FOREST CO.
HICKORY
Wheeler & D.
Cook
Cook Heirs
Hickory
MATTHEWS, NORTHRUP & CO., ENGRS. & PRS., BUFFALO, N. Y.



MATTHEWS, NORTHRUP & CO., ENGRS., BUFFALO, N. Y.

Oil Brokers.

E. B. PECK,

BROKER IN PETROLEUM.

(Representing J. J. Fisher, Oil City.)

Office in Oil Exchange,

BRADFORD, PA.

N. D. PRESTON,

BROKER IN PETROLEUM,

BRADFORD, PA.

Oil purchased and carried on margins.

J. D. LUPHER,

BROKER IN PETROLEUM,

N. E. cor. La Salle and Madison Sts.,

CHICAGO, ILL.

N. F. HILTON. JAS. A. WAUGH.

HILTON & WAUGH,

PETROLEUM BROKERS.

Oil bought, sold and carried on margins. Offices at

OIL CITY, PITTSBURG AND BRADFORD.

H. A. MARLIN,

BROKER IN PETROLEUM,

Oil bought, sold, and carried on margins.

BRADFORD, PA.

GEO. P. HUKILL,

BROKER IN PETROLEUM.

Special attention given to Buyers' and Sellers' Options.
Oil Exchange.

OIL CITY, PA.

B. W. VANDERGRIFT. I. M. SOWERS.

VANDERGRIFT & SOWERS,

BROKERS IN PETROLEUM,

Oil Exchange, OIL CITY, PA.

Oil bought, sold and carried on margins.

The New-York, Lake ERIE & Western Railroad.

BUFFALO & SOUTH-WESTERN DIVISION.

LOCAL TIME TABLE.

	(10)	Daily (4)	Daily (2)	STATIONS.	Mls	Daily (1)	Daily (3)	(11)
.. ..	P. M.	P. M.	A. M.			A. M.	P. M.	A. M.
.....	.....	6.50	10.20	Ar...BUFFALO..Lv.	0	8.10	4.45	.....
.....	4.17	.....	9.58	Lv.Limest'ne R'ge "	4	.....	5.06	8.43
.....	3.57	.....	9.47	" ... Big Tree... "	8	.....	5.16	8.48
.....	3.50	.....	9.44	" Abbott's Road "	10	.....	5.20	8.55
.....	3.33	6.14	9.35	" .. Hamburgh.. "	12	8.48	5.28	9.35
.....	3.30	.....	9.33	" .Water Valley. "	13	.....	5.30	9.40
.....	3.15	.....	9.26	" . Eden Valley. "	16	.....	5.36	9.53
.....	3.03	6.02	9.20	" . Eden Center . "	18	9.00	5.43	10.05
.....	2.40	5.53	9.09	" .North Collins. "	22	9.09	5.53	10.30
.....	2.18	.....	8.57	" ....Lawtons... "	26	.....	6.04	10.53
.....	2.00	5.37	8.49	" .... Collins. .. "	29	9.24	6.12	11.10
.....	1.45	5.30	8.40	" ...Gowanda .. "	32	9.30	6.20	12.00
.....	12.45	5.15	8.25	Lv.....Dayton... Ar.	37	9.45	6.35	12.30
.....	12.30	5.10	8.23	Ar.....Dayton ...Lv.	37	9.55	7.03	1.00
.....	12.15	5.02	8.19	Lv....Markhams.. "	39	10.00	7.08	1.12
.....	11.45	4.53	8.11	" ..Pine Valley.. "	42	10.08	7.17	1.32
.....	11.05	4.40	8.00	" .Cherry Creek. "	47	10.20	7.29	2.02
.....	10.30	4.29	7.51	" ..Conewango.. "	51	10.30	7.39	2.20
.....	9.38	4.08	7.34	" ....Kennedy... "	59	10 48	7.58	3.16
.....	9.00	3.53	7.22	" D.A.V.&P.Cr'g "	65	11.02	8.13	3.53
. ..	8.30	3.45	7.15	Lv.JAMESTO'N..Ar.	68	11.10	8.20	4.15
.....	A. M.	P. M.	A. M.			A. M.	P. M.	P. M.

Trains No. 1 and 4 stop at all stations on Sunday.

THROUGH CONNECTIONS FOR THE WEST.

(4)	(2)	STATIONS.	(1)	(3)
.....	2.50 P. M.	Ar.....BOSTON Lv	.....	3.00 P. M.
11.25 A. M.	7.25 A. M.	" .....New-York ..... "	5.45 P. M.	6.45 "
3.47 "	11.00 P.M.	" .... Binghamton..... "	1.21 A. M.	3.35 A. M.
2.03 "	8.55 "	" .....Elmira ..... "	3.07 "	5.35 "
9.25 P. M.	1.03 "	" .... Niagara Falls .... "	4.35 "	2.15 P. M.
6.50 P. M.	10.20 A. M.	Ar.. ..BUFFALO Lv	8.10 A. M.	4.45 P. M.
3.45 P. M.	7.15 A. M.	Lv... JAMESTOWN....Ar	11.10 A. M.	8.20 P. M.
1.03 "	5.20 "	" ..... Corry ..... "	12.55 P. M.	8.55 "
11.40 A. M.	3.55 "	" ..... Meadville ..... "	2.20 "	10.40 "
10.25 "	2.40 "	" .....Greenville..... "	3.36 "	3.44 A. M.
9.10 "	1.08 "	" ..... Warren ..... "	4.44 "	4.54 "
7.10 "	10.45 P. M.	" ..... Cleveland..... "	7.00 "	6 50 "
8.17 "	12.08 A. M.	" .....Ravenna..... "	5.42 "	5.47 "
8.05 "	11.55 P. M.	" .....Kent..... "	5 55 "	6.00 "
7.24 "	11.20 "	" .....Akron..... "	6.38 "	6.30 "
4.44 "	8.25 "	" ..... Mansfield ..... "	9.10 "	9.30 "
4.05 "	7.40 "	" .....Galion.. ..... "	10.00 "	10.10 "
3.13 "	6.48 "	" .....Marion..... "	11.02 "	11.02 "
1.18 "	4.50 "	" .....Urbana..... "	1.18 "	1.00 P. M.
12.46 "	4.04 "	" .....Springfield..... "	2.15 "	1.50 "
11.50 P. M.	3.10 "	" .....Dayton..... "	3.30 "	2.50 "
9.20 "	12.40 "	" .....Cincinnati..... "	6.00 "	5.30 "
.....	8.30 A. M.	" ChicagoP.Ft.W.&C.Ry "	.....	8.20 "
7.50 A. M.	6.50 P. M.	" .....St. Lonis..... "	7.10 P. M.	7.05 A. M.
6.25 P. M.	6.47 A. M.	" ....Kansas City..... "	8.45 A. M.	8.30 P. M.
5.10 P. M.	7.30 A. M.	Lv..... OMAHA .....Ar.	10.00 A. M.	7.35 P. M.

Train No. 1 arrives at Titusville 1.30 P. M., Oil City 3.40 P. M.

BRADFORD BRANCH.

(12)	(22)	(6)	D'ly. (20)	STATIONS.	Mls	(15)	(23)	(9)	D'ly (21)
P.M.	P.M.	A.M.	A.M.	Ar.] [Lv.		A. M.	A. M.	P.M.	P.M.
3.20	4.01	8.30	6.55	" .CARROLLTON. "	0	9.20	11.04	4.10	8.22
2 59	3.44	8.06	6.39	" ....Limestone.. "	6	9.43	11.20	4.35	8.42
2.52	.....	7.58	6.31	" ... .Babcock .... "	8	9.50	.....	4.41	8.50
2.45	3.34	7.50	6.26	" .....Kendall..... "	10	9.58	11.31	4.48	8.57
2.40	3.30	7.45	6.20	Lv...BRADFORD..Ar.	11	10.03	11.35	4.51	9.00
1.45	.....	7.35	.....	Ar...BRADFORD..Lv.	11	10.45	1.20	4.55	....
1.35	.....	7.25	.....	" ....DeGolia's....Ar.	14	11.05	1.30	5.03	....
1.30	.....	7.18	.....	" ...Custer City... "	15½	11.10	1.35	5.07	....
P.M.	.....	6.30	.....	Lv. .BUTTSVILLE. "	26½	12.25	2.05	5.45	....
.....	.....	.....	.....	.....		.....	.....	.....	....

EXTRA TRAIN leaves Buttsville at 8.40 A. M., Bradford 10.03 A. M., arriving at Carrollton 10.45 A. M., *Daily*.
EXTRA TRAIN leaves Buttsville at 1.10 P. M., Bradford 2.15 P. M., arriving at Carrollton at 4.55 P. M.
EXTRA TRAIN leaves Carrollton 11.50 A. M., arriving at Bradford 12.35 P. M. Custer City 1.20 P. M.
SUNDAY SPECIAL TRAINS leave Carrollton at 12.15 and 5.05 P. M., arriving at Bradford at 1.00 and 5.54 P. M.
Train No. 12 runs daily between Bradford and Carrollton.

TRAINS BETWEEN BUFFALO AND BRADFORD.

	(4)	Daily (2)	Mls	STATIONS.	Mls	Daily (1)	Daily (3)	
	P. M.	A. M.				A. M.	P. M.	
... ..	6.50	10.20	78	Ar.... BUFFALO....Lv.	0	8.10	4.45	.....
.....	6.14	9.35	66	Lv.....Hamburgh .... "	12	8.48	5.28	.....
.....	5.37	8.49	49	" .....Collins..... "	29	9.24	6.12	.....
.....	5.30	8.40	46	" .....Gowanda ..... "	32	9.30	6.20	.....
.....	5.15	8.25	41	" ..... Dayton ..... "	37	9.45	6.35	.....
.....	5.09	8.08	41	Ar.....Dayton..... Lv.	37	9.55	7.03	.....
.....	4.35	7.30	25	Lv....Little Valley...Ar.	53	10.31	7.46	.....
.....	4.15	7.10	17	" .....Salamanca ... "	61	10.55	8.07	.....
. ..	4.03	6.57	11	" .....Carrollton..... "	67	11.04	8.22	.....
.....	3.44	6.39	5	" .....Limestone..... "	73	11.20	8.42	.....
.....	.....	6.31	3	" .....Babcock..... "	75	.....	8.50	.....
.....	3.34	6.26	1	" ..... Kendall..... "	77	11.31	8.57	.....
.....	3.30	6.20	0	Lv....BRADFORD...Ar.	78	11.35	9.00	.....
	P. M.	A. M.				A. M.	P. M.	

Train No. 1 arrives at Bradford *on Sunday* at 1.00 P. M.

REMEMBER, THAT BETWEEN BUFFALO AND BRADFORD THERE IS NO CHANCE OF CARS !

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Chartered under the laws of the State of Pennsylvania for the purpose of doing a general Storage and Pipage business. The company now possesses

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WITH AMPLE STORAGE CAPACITY FOR ALL THE REQUIREMENTS OF PATRONS.

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AND BUFFALO, PITTSBURGH & WESTERN R. R.

☞ Correspondence and the patronage of refiners and those desiring to store and carry Crude Petroleum solicited.

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Buffalo, New-York and Philadelphia Railroad

THE FAVORITE ROUTE

TO BRADFORD

— AND —

Great Northern Fields of Pennsylvania

THE NEW SHORT LINE TO

WILLIAMSPORT, PHILADELPHIA,
SUNBURY, BALTIMORE,
HARRISBURG, WASHINGTON

AND ALL POINTS SOUTH.

Leave Buffalo at 8.00 a. m. and arriving at Olean at 10.48 a. m. Connects at Olean for Bradford and connects at Emporium with Philadelphia & Erie R. R. for all points West.

Train leaves Buffalo at 2.00 p. m., arrive at Olean at 4.38 p. m., Emporium 6.40 p. m., connecting at Olean for Bradford and at Emporium with P. & E. R. R. for Harrisburg, Philadelphia, Baltimore and the South.

Trains for Buffalo arrive at Eldred at 9.30 a. m., Olean 10.04 a. m., arriving at Buffalo at 12.35 p. m.

Afternoon train leaves Eldred at 3.10 p. m. and arrives in Buffalo at 6.40 p. m.

GEO. S. GATCHELL, Gen'l Superintendent. WM. S. BALDWIN, Gen'l Pass. Ag't.

30 miles Saved by the new BRADFORD SHORT LINE

Between Olean, Bradford and the Warren and Lower Oil Fields. Two fast Express Trains each way, daily except Sunday.

CONDENSED SCHEDULE OF THROUGH TRAINS.

EASTWARD.		MAY 25, 1882.	WESTWARD.	
Bradford Express.	Fast Line.	New-York Time.	Fast Line.	Pittsburg Express.
.....	1.40 P. M.	Ar.....Richburg.....Lv.	6.45 A. M.	1.40 A. M.
.....	12.30 "	" .....Olean..... "	8.00 "	2.45 "
7.50 P. M.	10.50 A. M.	" .....Bradford ..... "	10.00 A. M.	4.30 P. M.
6.15 "	9.20 "	Lv.....Kinzua. .....Ar.	11.40 "	6.00 "
5.30 P. M.	8.45 A. M.	" .....Warren..... "	12.06 P. M.	6.40 "
4.42 "	7.26 "	" .....Clarendon..... "	12.55 "	7.57 "
3.10 "	7.30 "	" ..... Titusville ..... "	1.30 "	.....
3.20 "	6.40 "	" .....Oil City..... "	2.20 "	8.55 "
2.00 "	5.40 "	" .....Franklin... ... "	3.10 "	9.45 "
12.43 "	3.30 "	" .....Foxburg..... "	4.27 "	12.10 "
12.13 "	3.18 "	" .....Parker..... "	4.38 "	12.27 "
9.00 A. M.	9.45 P. M.	" .....Pittsburg..... "	7.50 P. M.	6.20 A. M.

ADDITIONAL TRAIN—leaves Bradford 7.00 a.m. Arrives Warren 10.08 a. m., Clarendon 10.25 a. m. SUNDAY TRAINS leaves Bradford 8.30 a.m., 3.00 p. m. Arrive Kinzua 10.10 a. m , 4.40 p. m., Warren 10.45 a. m., 5.40 p. m. Leave Warren 9.25 a. m., 4.20 p. m., Kinzua 10.25 a. m., 5.00 p. m.; arrive Bradford 12.05 noon, 6.40 p. m.

See that your tickets read "via Kinzua."

WM. S. BALDWIN, General Passenger Agent.

FRAZER HOUSE,

RICHBURG, - N. Y.

Best accommodations. First-class Sample Room. Modern improvements. Moderate rates.

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THE PETROLEUM AGE.

VOL. I. BRADFORD, PA., AUGUST, 1882. NO. 9.

PETROLEUM.

CHAPTER IX.

From January, 1877, to Meridian of 1868—Foreign Demand—The Shipping Interests—The Pipe Line System—The Shamburg District—Further Operations in the Triumph Section—Developments on Oil Creek—Foreign Fields—The Punjab—First Attempt at Combination of Pipe Line Interests—Rapid Increase in Values, Etc., Etc.

THE year 1877 opened with a strong tendency toward improvement in all branches of the trade. The demand from abroad had absorbed the production to such an extent that all that was produced found ready sale at the price ruling, which was about $1.80 at the wells. The shipping interests were at this time in the hands of numerous parties. In fact, almost every refiner east or west had a representative in the oil region of its own, who purchased the supplies necessary and attended to the procuring of cars for transportation. The "Empire Line" and the "Erie" were the principal agents for furnishing tank car facilities, though there were many other corporations and individuals engaged. In many cases refiners, such as Clark, Payne & Co., Rockefeller, Andrews & Flagler, and Scofield, of Cleveland, furnished their own line of cars, and by this operation were saved the annoyance of falling short of transportation facilities, which was frequently the case with other and less fortunate parties. The manner of conducting this part of the business was quite simple, and yet it frequently gave rise to large profits to those engaged. A shipper required less capital than any other member of the trade, whose interests were equally extensive. The shipper usually had a representative in the markets whence he delivered the goods. This representative procured orders and made sales according to the ability of the house to transport, exporters being the principal purchasers, as it was about the only way they expected to obtain supplies. In transactions the seller was guided by instructions from the producing regions, as the price depended entirely upon the condition of the sources of supply. There were but few speculators who held stocks at this time, though the summer of 1877 witnessed the erection of a greater number of iron storage tanks than all the previous years of the business. Oil had descended in price to $1.50 a barrel during July and August, and this was considered a very low figure, and commanded the attention of men of capital. But transporters usually managed to purchase at a price so far below the figure at which sales were made as to leave a refreshing margin for gains. Sometimes during sudden fluctuations from 50 cents to $1.00 a barrel was made clear of all outlay. In the conduct of this business the shipper, after receiving his order from the east or elsewhere, secured his oil and applied to the Empire or Erie line for cars. These were placed in position on the side track designated and filled. A bill of lading was issued by the railroad company, upon which the consignor could make a draft on his consignee and have the same placed to his credit at the bank, thereby raising funds with which to make payment for the oil. This, of course, was done only by those who were possessed of small or limited means, in which case business was largely facilitated. As time passed, however, this feature of the trade gradually centred in a few leading shippers, as unfavorable competition drove out the smaller, and it finally dropped into the hands of one corporation, who have monopolized it for many years, almost to the exclusion of everybody else. This is known as the Standard Oil Company, which is also the principal refiner. This part of the business is therefore thoroughly revolutionized.

THE GREAT PIPE LINE SYSTEM,

which developed at a remarkable rate after the success attained by the Harley and Pennsylvania Transportation Company's lines, did nearly all the transporting from the wells to the principal railroads, but further than this the idea of transportation by pipes was not considered practicable for many years. Pipe lines multiplied with great rapidity throughout the producing regions, but no attempt to remove the product to the seaboard was thought of during the year of which we write. At Tidioute a line was constructed by Grandin and others, called the Tidioute pipe, which extended from the river to Triumph, and connected with all the producing wells on the route. Thirty cents a barrel was the charge first made, but this was soon afterwards reduced to twenty cents. On Oil Creek numerous lines were constructed

by various parties simply to convey the oil from the farms to the loading racks along the railroad which passed through the very heart of the richest territory. The Pithole and Miller Farm pipe furnished facilities for Shamburg operators, who, during this season, had unearthed quite a prolific pool on the Tallman and other farms. The wells in this vicinity were very good producers, some of them yielding as much as 400 barrels per diem. In this vicinity there was great excitement for a season. The Fee Well, on the Tallman Farm, was struck in the spring, and started at 300 barrels. This was soon afterwards followed by one owned by F. W. Andrews, which was also large, and, of course, was sufficient to elevate the spirits of all operators found running at large in that section. These flocked in from Pithole and Oil Creek in great haste, and, as a consequence, the section, which proved to be of extremely limited dimensions, was quickly dispatched. It is estimated, however, that a greater percentage of producers improved their financial condition in this division than in any other part of the region, except, perhaps, the original Oil Creek locality. From Shamburg the drill gradually worked its way into the country adjoining eastward, where oil strata was known to exist, though the quantity obtained from the wells that had been sunk up to this date was very small. At Shamburg, Hon. David Emery & Bro., Hon. Lewis Emery, Jr., began the career of success in oil developments that has given them place among the leading men of the oil nation. Here also arose a hero. All countries are supposed at some time in their history to possess a character worthy of special note in its historical compilations. This man was Wm. Bronson, a bright and active specimen of the oil fraternity, who conceived the idea of controlling the largest number of oil wells of any individual in the world. This work was begun at Shamburg, and continued throughout that section till the development of Pleasantville, early in 1868, and also at Triumph Hill, in the Tidioute district, where he obtained a large number of small wells at very moderate cost. He made a success of the undertaking so far as the number of producing wells he possessed was concerned, but owing either to inability to procure the proper assistance in giving the wells the necessary care and attention or the outlay was greater than the income, he soon after failed financially. It is well known that all old wells are like babes—they require a deal of nursing to keep them in proper running order and force them to perform their daily duties in producing crude. Through all the region thus far developed, the greatest skill was required to treat old wells and maintain their existence. No two ever act alike. Each must have its own remedies applied, for its sickness is always, as a rule, of its own peculiar nature. A slight exception may be made to this, perhaps, where salt water abounds in profusion, as at Tidioute and Triumph. Here the wells when first struck produced nothing but oil clear. In a short time, however, it would be noticed that salt water was accumulating in the receiving tank. This gradually increased while the quantity of oil decreased; the volume produced remaining nearly the same, from 25 up to 250 barrels per day, to each well. The same was true of the Oil Creek territory, and at Watson Flats the brine became so abundant as to completely extinguish the light of the last drop of the precious liquid in nearly all of the old wells. In a few cases constant pumping for weeks, and sometimes running into months, the water becomes sufficiently exhausted to admit of the return of oil in paying quantities. By this process during this year a number of abandoned wells were resuscitated along the creek.

The year 1867 may be considered an eventful one in the history of petroleum. The whole world began to awake to the importance of the article as the proper agent of light. And its other properties, such as constitute the lubricants, and such as are made to occupy conspicuous positions upon the drug shelves, begun also to be more thoroughly understood. The daily yield throughout the entire year was more evenly maintained than any previous period. The lowest monthly average was October, when the entire yield of the country had fallen below 8,000 barrels a day, and the price was about $3.50 per barrel. Toward the end of the year, however, the production was increased somewhat, owing to extensions made to the producing area in the vicinity of Petroleum Centre and other points along Oil Creek. Many rich spots were found beyond the limits prescribed by the trade all the way along Oil Creek; especially was this so in the vicinity of Rouseville and the Skinner, Tarr and Blood Farms further up the creek. But the oil business throughout was in a comparatively healthy state. The article was being introduced into many parts of the old world. Here, however, it had a most powerful opponent in the shale oil industry of England and Scotland. Europe, of course, was the objective country for the introduction abroad of American petroleum,

and all prejudices of every character, national and otherwise, had to be overcome before the article would be received there as a competitor in the market with the home manufacture. About 400,000 barrels of illuminating oil was made annually from the shale works of Scotland alone, besides about 45,000 barrels of lubricating species. In Germany, France and Italy works for its manufacture were also known to abound.

Then, moreover, there was also to contend with a large production of a species of oil very similar to our own product in various parts of Europe and Asia. On the borders of the Caspian Sea, in the Caucasus, Russia, it is estimated that there were between 18,000 and 20,000 producing wells at the time of which we write—the Fall of 1867. These wells were all of the surface variety, however, and yielded oil without the trouble of inserting tubing and casing. They were simple pits from which the liquid was extracted by means of a bucket attached to a windlass. By this process it is calculated that about 2,000 barrels a day were extracted from these pits, which were from 10 to 30 feet in depth. One peculiarity of these wells was the fact that they did not seem to drain the territory, as in this country. An instance is given of the sinking of a new well by the side of one that had yielded oil for centuries, and the fresh one produced 150 barrels per diem for several months. The capacity of the wells to produce varies very much, as in this country. The oil is, of course, inferior to the American product, being of a heavier grade and darker color. The means for conveying the Caucasus product to market were at the time named very crude. It was carried in leathern sacks on the backs of mules and in carts to the sea coast. By ship it was then taken to all the ports of the Caspian Sea, and though purely a Russian production, yet four-fifths of the population of the empire were unacquainted with it. The trade at this time, however, was beginning to improve somewhat. The fame of the American method of drilling had reached the Caucasus "district," but even then, owing to the peculiar character of the rock and nature of the product, together with the inclination of the latter to rise to the surface of the earth and force its way through the fissures of the rocks, had a tendency to cause the inhabitants to continue in the old way of gathering what oil oozed from the ground into the holes or pits.

During this year the services of a gentleman from Pennsylvania, B. F. Smith, Esq., were secured by the Public Works Department of the Government of India, to report on the commercial value of the oil lands of the Punjab. This is a region of country about 100 miles square, lying between Cashmere and Cabul, between north latitude 32° 31′ and 33° 47′, and east longitude (from Greenwich) 71° 18′ and 73° 5′. Mr. Smith a year later made, in part, made this report of what he discovered in the Punjab:

"The river Indus enters the square about the middle of the northern edge and leaves it at the southwest corner. The Jhelum River flows across the southeast corner. The region lies mostly between these two rivers, in what is called the Sind Sagur Doab (two rivers), and is mainly in the mountainous or hilly part of the Doab. The oil has been bored for at Gunda, and at first fifty gallons of it a day were pumped from the well, but the yield, of course, grew quickly less, and after the whole amount had reached two thousand gallons (about five months) the daily yield was less than ten gallons.

"Oil flows also at five other places from natural springs, from a gill to three quarts a day, and there are traces of it at yet two other places.

"Asphalt, or dried oil, is found at four of these places, also at others, at two in notable quantities. At most of the asphalt places there are traces of this rock tar, or asphalt, melted in the heat of the sun, and at one of them (Aluggud) as much as one hundred gallons. This oil seems to have come from rocks of carboniferous age, to judge by their fossils.

"All the other oil springs, or shows of oil in the southern part of the region, are on the northern side of the salt range and in the nummulitic lime rock, or close above it. In every case the oil seems to come from a deposit of very small extent, sometimes only a few feet, seldom as much as a few hundred yards; only in one case, that of the Burra Kutta oil springs, near Jaba, does the deposit extend as much as half a mile. Here, too, the oil comes from a thickness of about a hundred feet. At all the other places it comes from a depth of from forty to twenty feet, and less in depth. Scarcely do any two oil springs come from the same bed of rock.

"The oil is dark green in color, and so heavy as to mark 25°, or even less. The Gunda oil has been burned a little by the natives with a simple wick resting on the side of an open dish, but the Punnoba oil is more inflammable and needs a special tube for the wick, though the main opening of the dish may stay uncovered. The oil generally has been little used for burning, but has been sought for as a cure for the sore backs of camels. The asphalt was highly prized by the

natives forty years ago as medicine, especially for broken bones. It was carried far and wide, and was called 'negro's fat,' because it was believed to have dripped from the brain of a negro who had been hung up by the heels before a slow fire."

This certainly indicates the existence of oil in that region, but it by no means points toward a competing field even as against the comparatively successful shale oils of Europe. The same thing may be said of the oil regions of China and Japan, in both of which countries the article is found in some quantity. Long ages before oil was discovered in this country, China had sunk wells to the depth of more than a thousand feet in search of oil and gas. The boring was accomplished by the use of a tube six inches in diameter. These wells were great gas blowers, supplying the towns and villages for many miles around with light and heat. The gas was conducted by bamboos to the place of utilization, and being admitted to furnaces, was found of great value in developing the salt mines of that region, as well as for manufacturing and general heating purposes. Developments of a more recent date will be worthy of mention at the proper time. As yet, however, there have never transpired in the empire any such development as has characterized the

GREAT PENNSYLVANIA REGION.

Here all that science, skill, genius, perseverance, intelligence, integrity and energy could do to extend the interests of a great industry was applied, and the progress made accorded harmoniously with the true spirit of the exalted order of civilization under which the American oil development occurred. So, during the period of 1877, the business enlarged in all of its branches quite extensively. Drilling in the Tidioute region had nearly ceased altogether. The track of the belt westward from Triumph was for a season lost sight of, and the operators spread to the region between Pleasantville and Shamburg as offering some inducements for the use of the drill. Pithole had lost its vigor, and the sound of the song of one of the happy pilgrims who manipulated the temper screw or dressed the "centre bit" was no more to be heard in that land. There was a movement farther northward, however, and during the early part of 1868 this resulted in the opening of an extensive scope of medium territory, extending from a point three miles north of Pithole to one mile north of Pleasantville, including the ground upon which all of the eastern portion of the village stood. This was the cause of the excitement, that can only be equaled by a similar occurrence. Here was a country exceedingly pleasant and decidedly rich and valuable in agricultural relations, but it was given up to be slaughtered as a victim to the depredations of the petroleum monarch, who marched over the region with remarkable strides, demolishing beautiful grain fields and treading upon the richest vines that spread themselves over the most pleasant and delightful gardens. The sand formation of this particular section was of an inferior quality, both as regards texture and thickness. It was quite prolific, however, many of the wells starting as high as 200 barrels a day, but their existence at this rate was of short duration. The field came into prominence very suddenly, and, like a tailless comet, went out of sight before the trade was thoroughly aware of its existence. Nearly a thousand wells were drilled on the scope, which was about three-quarters of a mile wide, and between three and four miles in length. The wells so suddenly dropped from their original, or starting point, that benzine was used to a remarkable extent in reviving them. The oil possessed a distressing portion of paraffine, and the application of benzine unquestionably benefited them for a short season. Torpedoes had not yet come into general use throughout the country, and for this reason the production of new fields was seldom, if ever, as great as it would have been with their use. About this time numerous attempts were made to develop an oil deposit north of Tidioute, and near the station called Garland, on the P. & E. R. R. In this the McGrew Bros., of Pittsburg, figured largely, having by purchase and otherwise secured large bodies of land in the vicinity. The tests having all proved the worthlessness of the territory so far as oil was concerned, it was abandoned and remains so till this day. East and southeast of Oil City some explorations were conducted with more or less success. Messrs. Vandergrift & Forman, who had control of the shipping business from Pithole by rail, were endeavoring to develop territory which they possessed on the south side of the river, and succeeded in causing some stir and the production of some oil in the neighborhood. The wells were not large, and the profits on investment were quite limited.

It was in June of the year 1877 that the first attempt at combination of pipe line interests occurred. Mr. W. H. Abbott, who had previously purchased the Pithole and Miller Farm pipe from Henry Harley, consolidated interests with the latter, who had by this time succeeded in estab-

lishing a pipe line from Benninghoff Run to Shaffer Farm. This established the firm known as Abbott & Harley, which became so prominent in the annals of Titusville and vicinity. During this season, also, the construction of the Union & Titusville Railroad was begun, and before completion was sold under a mortgage foreclosure. This transpired in the spring of 1868. The enterprise was afterwards revived by Abbott & Harley, John Fertig, Dan. H. Cady and others and pushed through to completion. A want of patronage, however, together with the fact that the Oil Creek and Allegheny River railroads had entered upon a siege of disastrous competition, forced the stockholders into a compromise and final sal of the whole line to the latter road. Thus ended competition in the railroad business connecting the oil regions with the outer world from the north.

In the early part of 1868 the demand for oil for export purposes became so great as to cause a severe competition among buyers of crude. It was not an uncommon occurrence to witness an advance of 25 and 50 cents a barrel in a few hours' time. Oil Creek, with Oil City as the centre or head-quarters for all large shippers, was the real and substantial source of supply. All other fields or districts were looked upon as simple offshoots of the great deposit that underlaid the valleys and hills skirting this famous stream Operators who had wallowed through its mud from the beginning, stuck to it until its life blood oozed out entirely in later years. The shipping of the crude from the creek was simplified by the construction of the Oil Creek Railroad, so that the flat boat and barge business was called off, and the ludicrous scenes and incidents connected with transportation in the early years were no longer witnessed. Oil Creek, however, at the opening of 1868 was rapidly declining again in daily yield, which, of course, was the principal cause of the advance which followed during the early spring shipments. The total yield of the region was less than 9,000 barrels a day, whereas a year previous it exceeded 10,000 barrels. Prices gradually improved from $1.85 in January, 1868, till July of the same year, when the average price for that month was $5.25 a barrel at the wells. In one day in the latter part of the month of April, or first of May, the market jumped from $2.00 to $3.50 per barrel, and everybody connected with the trade seemed anxious to obtain it even at that. It was a most interesting season not only for those who had purchased large quantities at low rates, but also for the "noble producer," who, though his wells were declining in yield, was making up for all deficiencies in the increased value of his goods. So we enter the meridian of 1868 with but one field attracting the serious attention of producers. This, as above stated, was Pleasantville. The oil found here was in color nearly black, and was inferior to that found in any other part of the region for illuminating purposes.

The whole region may be said to be in a prosperous state. The effects of the collapse of Pithole, and the financial disasters following, had began to be overcome, and a more legitimate and steady business was the result. Capital from abroad sought the region without pressing invitation. Banks for the accommodation of the public were established in all important oil centres. The town of Tidioute was not blessed with an institution of this kind till the spring of 1866, when Grandin & Baum swung out a shingle to the great relief of the trade in that part of the world. This institution continued until 1869 in the enjoyment of supreme control of this business, and no complaints were heard of its inability to cope with the demands of the public. At Titusville the Second National Bank was organized and established by G. C. Hyde as the head, in 1867, and at Oil City, Geo. H. Bissell & Co., The First National, the Savings and Lamberton's banks supplied all necessaries in that locality.

(TO BE CONTINUED.)

THE TORPEDO WAR.

THE bombardment of the Allegany producers by the great guns of the Roberts Torpedo Company, which took place early on the 13th of July, was not quite as successful as was that of Arabi Pasha's fortifications at Alexandria by Admiral Seymour. The causes were motions made by nine producers in the Allegany Oil Field to set aside defaults which had occurred in suits brought by Roberts and others against the producers, charging them with infringing certain patents which the complainants claimed to hold for increasing the production of oil wells. In each of these cases injunctions had been issued, and, the counsel for the producers, moved the court to open the defaults and let in the defendants to defend and stop all proceedings against them on the default, and to dissolve the injunction in each case.

The court opened the defaults in all the cases and allowed all the defendants to answer and defend, and stayed all further proceedings on the

defaults. In three cases above referred to the court permitted the injunctions to stand to await the result of the suits, saying that the defendants by their acts as above set forth were not in a condition to ask to be relieved from the injunction against violating certain patents that Roberts held, that had been sustained by the Pennsylvania courts, but he vacated all that part of the injunction in those five cases which restrained the defendants from violating a patent obtained by Edward L. Sweet, which has many years to run, and which the complainants claimed as assignees.

While this cannot be looked upon as a great victory for the nine applicants, yet it indicates to an extraordinary degree, and far beyond the wish of the plaintiffs, the willingness of the court to give the producers a fair showing for justice. This was really more than they could have expected from a Pittsburgh court, for what reason the Roberts Company and the court alone could determine, except that court decisions in Pennsylvania become, as the laws of the ancient Medes and Persians, unalterable and unchangeable. It seems to be a rule in this State for one judge to adhere closely to the maxims laid down by contemporaneous rulers. The arguments in the above cases will be of great interest, and the decisions much greater to the oil trade generally.

As heretofore stated there must be some means for satisfying the public regarding the validity of these Roberts' patents. If they are what the owners claim, it is ridiculous and shameful for producers to attempt to dodge the responsibility of infringement. On the other hand, if it can be determined that the rights claim d by the company are fraudulent, the abolishment of the organization as a usurping monopoly should, and would, follow with supreme regularity and dispatch. Give us light on the torpedo patent business.

PHILADELPHIA OIL MATTERS.

ON the 24th of July a petroleum exchange was duly opened for the transaction of business, with seventy-nine members. Mr. W. H. Smith was elected President, W. N. Vigures, First Vice-President, James R. Clark, Second Vice-President, John H. Waugh, Treasurer, and A. Newhouse, Secretary. The board of directors is as follows: S. S. Wenzell, Malcolm Lloyd, John Gill, Jr., A. H. Logan, Ed. C. Street, H. C. King, S. W. Powell, Henry L. Davis, John S. Davis Samuel Q. Brown, John Lange, R. D. Allen.

This new enterprise has awakened fresh interest in petroleum matters in the substantial city of Quaker propensities and centennial recollections. It (the city) never before fully appreciated the importance of the oil trade, and it is perhaps owing now to the interest taken by a few men having close relations with the oil country that this much has been accomplished. Early in the year Mr. John H. Waugh, a member of the Philadelphia branch of the firm of Hilton & Waugh, petroleum brokers, began to agitate the question of an exchange. He brought the subject before such men as Malcolm Lloyd of the Phœnix Oil Company; A. H. Logan, of Logan, Emery & Weaver; S. Q. Brown, Treasurer of the Chester Oil Company, and a well known former citizen of Pleasantville, Venango County, Pa., S. S. Wenzell, John Lange and others, who were immediately impressed with the importance of the move, and gave Mr. Waugh every encouragement that they would support the enterprise. A subscription paper was then started, and sixty-seven names secured at $50.00 each as a membership fee; twelve others were obtained at $250.00 each. Of course, this required time, but after the opening of the produce exchange, which occurred in March, at which there were present a large number of oil men, the matter moved more easily. Finally, on June 13th, an organization was effected, and Mr. Waugh and his supporters were rewarded fully for their efforts. Rooms were secured in a pleasant locality in the centre of business on Walnut street, and the Philadelphia Petroleum Exchange is now known wherever there exists an important trading post for the material. Let the procession keep moving.

CRANKS IN OIL.

THIS is the age of cranks. The atmosphere seems to nourish the brood. They hatch more speedily than ever before. There are innumerable specimens of cranks. They move, like vultures over a decaying carcass, around the seats of legislation, and are always in search of food they could not eat should they be so fortunate as to procure it. A crank may be termed an intelligent fool, if anybody can determine just what that is. This, however, is the only way possible to designate them as they appear in every community. These "fools" abide in your houses when you are not aware of the fact. They occupy all manner of official position and trust. They are in the churches, the schools, the theatres, the shops, and everywhere. All that is required to distinguish them from the other class of community is to hear them tell of

their own exploits and magnify their own greatness. Their business, as a rule, is sticking their nasal organs in the dirt of every good person of their acquaintance and circulating false statements against their neighbors. A crank is a liar, and a liar is a crank, and the person who goes about demolishing the character and standing of the substantial, should be confined as a lunatic, or transported, free of charge, to Demons' Land, or somewhere else. The crank is always found perusing the contents of the dark page of passing events. He always beholds a coming storm of disaster and difficulty to everybody and everything. He magnifies the mistakes of his fellowmen, and never smiles, only when he beholds others deeply depressed by the effects of error. These wretches may be found among the professional classes largely. They are very smart in their own estimation. They are always ready to bring a libel suit against somebody or the Press, should their eyes fall upon an item that was somewhat unpleasantly personal.

But, moreover, there are other cranks who should be looked after. These are they who go about the Oil Regions, carrying a huge Satanic grin, and "smirking and slinking," and prating about the weak financial condition of this and that man or firm, especially among producers of oil. Whenever a man is heard to remark that "two-thirds of the oil men are bankrupt," and the other third is liable to be sold out by the sheriff, he can be put down as a crank, and should be disarmed at once. He is dangerous. Such creatures have been to Bradford and other cities of Oildom recently. They do great damage for the time being, but it is generally of short duration. These vultures seldom, if ever, rise from poverty and "dead-beating," and a law should be enacted that would punish with death, or some other severe penalty, all men who injure others by false reports in any manner.

MONEY SQUANDERED.

THE dry hole of the Whale Oil Company, on lot 648, revealed a rather distressing state of affairs to some parties at least. Six hundred and fifty dollars an acre and one-eighth royalty constituted the stipulations in the transfer of much of the land immediately surrounding. The well, prior to its completion, was looked upon as one of the surest and most promising ventures beyond the immediate limits of the producing wells. The owners were so positive in their estimations of its future, that they had ordered and partially erected over 5,000 barrels of wood tankings, and had more in view. Others, also, besides the owners, were equally as positive in their belief regarding the final success of the venture, and were in no way backward about investing money at any range within a comparatively extensive compass. What was true of 648 was also partially true of 633, 659, and 671. The two latter are, of course, mysteries at the present time; but, as to 633, it is tolerable clear that the show is very light. The amount of money, therefore, that was anchored in the sales and resales of real estate in these lots alone amounts to hundreds of thousands of dollars, and, unless the old man Dunham's theory be true, "that as he had paid for his land, served God according to the dictates of his conscience, and promptly paid his taxes, God would be unjust in not having placed oil under his farm," in which case there would be some promise of reward, the investments most recently made there must all prove dead losses. It is a question to be decided at some future time whether there will not be nearly as much money anchored in that field as will be fished out of it.

STOCKS ABROAD.

THE stocks of petroleum in London have been quite materially increased since January 1st. At that time there were about 180,000 barrels stored there, and on the first of July this amount was swollen to 228,500 barrels. As this is only about five months' supply for the London trade, it is more than likely, instead of decreasing, the quantity will continue to increase. The demand for the article is becoming so universal and so extensive, that it will be found necessary to increase the quantity kept in store at every port in all the nations blessed by its brilliant rays. We have no fears for the future of the trade. It is destined to grow, and to so enlarge in all its varied branches, that it must stand first in American commercial interests.

In addition to London, Antwerp, Bremen, and, in fact, all of the Continental ports, are tolerably well supplied with the product. Dealers, however, do not grumble, and are in no wise alarmed over the situation. Knowing the circumstances, they are still willing to harbor a few more thousand barrels at 50 cents. It is more than likely that they could procure it at even lower rates than this had they facilities for *pricking* up the waste portions of Warren County. But the demand of China during the past six months,

Japan and other Asiatic countries, for petroleum, has troubled European dealers, and a strong disposition seems to be manifest on their part to *smother* intelligence from those quarters. A great cry goes up regarding immense stocks in London — five months' supply — when the fact is, that great mart should have at least one year's supply somewhere to save her from some of those big corners America is likely to raise one of these fine mornings. How sickly London dealers and those of all the other ports would feel when informed of the fact that the American sources of supply were becoming exhausted, and they had neglected to seize the favorable opportunity now offered of "going long" at 60 cents a barrel or less. History is destined to repeat itself for the hundreds of years yet to come, and in the oil business it does so about once in every seven years. It is nearly time for an advance, but this will probably be postponed till after the pool of Cherry Grove has become exhausted somewhat. The trade should, therefore, have no fears of increasing stocks abroad. Were they double what they are to-day there would be no cause even then for alarm. The world wants this cheap light, and will have it, and so long as no other commodity can be procured to successfully compete with it, even were crude prices double what they are quoted to-day, no power can prevent its increased consumption.

DESERTED OIL TOWNS.

THE *Oil and Paint Review* goes for the oil towns of Allegany by the use of the following doleful strains:

"What do we see to-day, a few weeks after? The teeming towns of Allegany literally deserted, oil land values almost *nil*, drilling operations fifty per cent. less than they were on June 1, and the new production nearly as much less. Allegany is not mentioned among the fickle oil operators, except as something remembered. Warren is now the goddess at whose shrine they lay their offerings.

"The centre of oil production has gone away from Richburg and Bradford, and the interests of the trade now revolve about a village in the hemlock forests of Warren County. 'Garfield,' with its rush of thousands and its meager board houses, is the oil center of the world to-day. In sixty days it is believed that the new district will be producing as many thousand barrels of oil a day. Its six wells are now yielding as much as two hundred and forty wells in the old fields can possibly do. The twelve thousand wells of the northern field have been producing about 75,000 barrels a day. As the production of the new Warren field increases the old field will decline, for it is not likely that any new wells worth recording will be completed in either Bradford or Allegany during this month, and the sucker-rod will be out of use entirely. The revolution has been great and sweeping, and the end is not yet.

SOUTH AMERICAN OIL.

(REGULAR COR. OF THE AGE.)

July 1st. — It has been known for ages that there are deposits of petroleum along our coasts and extending back through a range of country somewhat mountainous. Oil has been dipped from the surface of the waters on Moot Creek, a small stream receiving its first impulse in the Peruvian hills some 140 miles from this city. But little has yet been accomplished toward developing this source of Brazilian or Peruvian wealth, and the recent war has put a determined check to all attempts at operating for the present. Large tracts of land were secured a few years ago by German and American capitalists for the purpose of prosecuting developments, but the discouraging condition of the country, and its remarkable backwardness in the matter of transportation facilities, has discouraged every person from making an outlay of money in this direction.

An American oil producer, F. Prentice, secured claims from the Government, as also from other capitalists who had preceded him, with the intention of operating at once. He has not yet made the attempt, however, and it is not certain that he will very soon.

The oil used here is manufactured in New-York, and, as a general thing, is of good quality. There are occasional complaints, however, of its smoky character, and the natives have not begun to use it to the extent that one should expect. Whole sections of the country, as well as large towns and cities, have scarcely begun its use, which is a circumstance that may be considered peculiar. South America would use a large percentage of the daily production of Pennsylvania, were the people supplied with facilities for burning it properly, and schooled in its use. As a rule, they are afraid of it, and in many districts both of Brazil, Peru, Bolivia, and even Chili, a smell of the liquid has never yet reached. There is a large opening in these countries for oil supply companies. The article could be sold at

75 cts. or $1.00 a gallon in many parts, as the people are given to luxurious living where they are possessed of any means at all. Intelligence is at a low ebb throughout the greater part of the whole continent. The brutal forces of men's nature stand out prominent, and it would require an age, that is, a few centuries, to bring the race up to the standard of the true American or English idea. With the spread of intelligence, therefore, it is presumed, will come a more extensive use of petroleum and its products.

THE ALSATIAN OIL WELLS.

THE French would doubtless have talked as much about their oil wells as the Germans, were it not for the fact that Alsace no longer belongs to them. However—although the Germans believe they have "struck oil"—they have hardly done so in the American sense of the term, for the Oelheim Company has 3,000 barrels of their oil on hand, and the bottom would seem to have fallen out of their merchandise in more senses than one.

A recent French paper gives a description, together with a map of the "new" Alsatian oil fields, which seem to be situate at no great distance from the historic field of Woerth. The establishment itself, as it is designated, bears the name of Pechelbronn (pitch well), which, however descriptive it may be, is also figurative and suggestive in the German language of anything but success. We are told that the well was mentioned in a work published in 1489; the peasants using the bitumen for greasing their vehicles and for medicinal purposes. Mention of the well has also been made by several other writers. Anyone who has ever read Reybaud's political romance of "*Jerome Patûrot á la Recherche d'une position Sociale*," will remember the part that asphalt and bitumen took in the wild speculations after the revolution of "'48." Perhaps if the "bituminists" knew as much then as now they might have adopted the plan which the French paper informs us has been so successful. At one time the sand with which the bitumen was mixed was boiled, so as to obtain a liquid bitumen, but according to recent improvements in distilling apparatus, the product of distilled bitumen is equal in quality to that of the finest oils. The veins of bitumen are exceedingly rich—some of the wells have produced as much as 30,000 cubic centnals of bitumin. The old layers have been abandoned, but recent borings at a greater depth have revealed the presence of sheets of oil at 500 feet. This oil is not like the old bitumen, and on being distilled it yields an illuminating oil that is comparable to American, and a heavy oil. The yield from this well is some 200 barrels (of 180 liters each) per week. The system used is that of Fauwell, and as the tube has a diameter of only 22 millimeters, the flow cannot be rapid, Some borings have also been made in the forest of Haguenau, but nothing came of them, the strata being too irregular. —*Oil and Paint Review.*

SAFETY PLUG AND VALVE FOR BOILER FITTINGS.

The object of a recent invention is to prevent injury and loss of life from the breaking off of cocks, valves, or pipes that are used in connection with steam boilers, and is a safety plug and valve for cutting off the steam automatically in case the valves or cocks become broken. It is a tubular plug, formed with an external thread at one end, for tapping into a boiler plate in the usual manner, and it has also an external thread at its outer end, for the attachment of a valve or cock. The aperture of the plug is tapered at its inner end to form a valve seat. It has a valve of tapering form, and provided with a stem that extends through an aperture in a guide yolk; the yolk serving to retain the valve central, and is attached to a ring that is fitted in a recess in the end of the plug. To the inner end of the valve is attached a wire that extends to near the outer end of the plug, where the wire is formed with an eye, and is secured by a screw-pin fitted crosswise of the plug and passing through the eye. The valve and wire are so adjusted that the pin retains the valve off its seat at the inner end of the plug, and the valve being held open, the ordinary use of the valve attached to the plug is not interfered with. In case the outer valve is knocked off or broken, the projecting end of the plug will also be broken, and the wire will be released, and the steam pressure will close the valve on its seat. The safety-valve can be conveniently used to close the plug when it is desired to remove the fitting. The invention has been patented by Mr. John J. Mackedon, of Omaha, Neb.—*Scientific American.*

THE Roth Well, on lot 560, within the limits of the Clarendon field, was recently drilled to the lower rock without promising results. It produced oil for a year or more from the Clarendon sand.

TRADE JOURNALS.

WHAT commerce does to stimulate the industries of the world the trade journal does for the trade it represents. It would be difficult to name a trade of any importance which is not represented by its journal. The reason of this is clear enough to those who know how much absorbed good workmen are in their calling, and how anxious they are to know what is going on in their own immediate world — what improvements and developments are taking place, what is new, and what becoming obsolete. As the daily paper presents to the general public reports of notable events in the social, political and commercial world, so the trade journal culls all facts bearing on the interests it represents, and furnishes them to its readers.

The importance of trade journals is indicated by the fact that they are wholly supported by the trades that each represents, and cannot be said, to any appreciable degree, to be read by the outside public. And this condition of things is quite natural, because every one takes the greatest interest in what most intimately concerns himself, and the journal of greatest value to the tradesman is that which has something instructive and encouraging to say about what he is doing, and about what others in the same trade are doing. Some shrewd observers of human nature maintain that the nature and quality of a person's reading, and the departments of a paper to which he turns with greatest eagerness, are sure indexes to his avocation.

Notwithstanding the cordial support given to trade journalism in the United States, it may be said that it is not wholly understood or appreciated by those most interested. Much more could be made of it if its readers were to consider themselves as contributors and correspondents. There is probably no member of a trade or profession who does not wish to know something or have some doubt removed. There are probably few, whether employers or employed, who have not discovered something in their special calling which, if known, would be of practical value to those of his own trade. Many of the best workmen hesitate to take up the pen to enlighten others, though they are willing to do so, and know that they have ideas which would be helpful to their fellows, simply because they cannot turn out their sentences in a style which they consider proper for a widely-read paper. This is largely due to false modesty, and perhaps through indulging it many a brilliant idea, and often a valuable invention or suggestion of real practical utility, is buried in a man's bosom, and dies with him. It is the *idea*, and not the language which clothes it, that is important. It is the diamond, with its bright sparkle, and not the setting, however rich, that attracts the eye. So the tradesman who has developed anything new in thought or in actual experiment is in duty bound to give currency to it for the benefit of his fellow-workmen, where this can be done without too great pecuniary sacrifice. The gospel parable reproves him most severely who wrapped his talent in a napkin and buried it.

If all artisans and mechanics were to consider their own trade journal as the storehouse for their ideas, and a free exchange for all communications affecting their calling and interest, every journal of this class would grow in importance and general interest. It would be a means of improving their condition, enhancing their skill, stimulating original thought, awakening a more friendly feeling among mechanics, and possibly effecting a better understanding between employers and employed. Here in the Oil Regions, of course, there has never existed difficulty between employer and employed, but the rule applies in other regards with full force.

JULY SALES.

FOLLOWING is a summary of the sales of oil at the Bradford, Oil City, Pittsburgh and New-York Oil Exchanges during the month of June. Nothing less than 1,000 barrel certificate ever sold; each barrel represents forty-two gallons:

	BRADFORD.	PITTSBURGH.	OIL CITY.	NEW-YORK.
January,	23,885,000	11,441,000	27,163,000	
February,	19,412,000	9,153,000	22,207,000	
March,	27,467,000	13,208,000	29,448,000	
April,	22,245,000	8,325,000	19,171,000	15,000,000
May,	39,777,000	21,814,000	38,402,000	35,000,000
June,	29,969,000	20,417,000	38,127,000	21,000,000
July,	48,736,000	22,040,000	31,536,000	22,400,000

Average runs and shipments each month of year to June 31st:

	Total Daily Runs.	Bradford Daily Runs.	Total Daily Shipm'ts.	Bradford Shipm'ts.	Charters.
January,	70,401	62,229	55,798	40,864	33,877
February,	81,853	72,825	63,062	47,183	43,075
March,	81,186	65,758	53,489	38,963	41,080
April,	80,158	67,392	54,413	35,662	35,453
May,	83,397	75,472	56,478	43,329	47,220
June,	89,103	78,701	65,266	47,980	54,829
July,	87,948	65,445	61,779	41,013	34,213

THE Union Pipe Line in the Warren field has passed into possession of the United Pipe Co. There is still at work there the McCalmont Pipe Line as an independent concern.

DEPARTMENT OF SCIENCE.

EFFECTS OF THE HEAVENLY RANGERS ON OIL MEN, INTERESTING MATTERS.

THERE is at least one man in the Oil Regions who believes that the stars influence affairs in oil. He thinks all new developments are results of conjunctions of the planets and other "eccentricities" of the heavenly bodies. When Geo. H. Dimic, therefore, was plodding over the country in search of a lease upon which to plant a wildcat, he was influenced by some of those strangers who inhabit space. Doubtless, the tailless comet which started out for the earth about that time had its eye on George, and mysteriously led him by the nose around to the wilderness of Cherry Grove, with the result given in this AGE. But whatever the influences were, it is a matter approaching the phenomenal that Cherry Grove came into existence when it did. The fact that the field is a narrow belt, less than half a mile in diameter, and less than four miles in length, as at present defined, should be tapped the first, second, third and fourth times by four successive wells, occupying a diagonal line (of 45°) from northeast to southwest nearly the entire length of the pool, and almost squarely at its centre, is beyond comprehension. In the Allegany field a hundred dry holes were sunk, trying to ascertain the exact position of the oil deposit. This fact nearly discouraged those who had the most faith in the final result there, but here, at Cherry Grove, the second wildcat in the region—Landsrath, on 668, being first—goes straight to the centre of the jugular and deluges the country with a 1,000 barrels a day. Now, should anybody desire to try his luck in stargazing as a means for ascertaining the other rich pools that are supposed to exist, not only in Warren County, but also in other parts of the country, he can take the following chart and proceed to his heart's content. It is a summary of calculations for August, presented to its readers by that excellent journal, the *Scientific American*. It is as follows:

"August, then, promises abundance of employment for the student of the stars. Venus comes first on the list for her close conjunction with Mars, and for the queenly grace with which she reigns during the evenings of the last month of summer. The lordly Jupiter holds his court in the morning sky, and rewards with a glance of his beaming face the early riser who anticipates the dawn. The full moon lends her silvery radiance to the nights of the last week of summer. The August meteors give variety to the monthly programme, and illustrate the delightful uncertainty of cometic astronomy, for no mortal can prophesy whether a few hundred meteors will be imprisoned in our atmosphere, or whether the annals of the year will record an unusually abundant shower of golden rain."

We are sure the last clause, at least, will catch the eye of the average oil producer. Oil is usually dominated "golden rain," and, according to the operations of those heavenly rangers, we are destined to have some kind of weather, and some oil.

FIRE RISKS WITH ELECTRIC LAMPS.—In obviating the fire risks incident to the use of oil and gas lights, electric illumination has quite fulfilled the promises first made for it, but users of electric lights are learning that they are not without their own peculiar hazards, which experience is the only means of discovering, hence the need of especial watchfulness for new developments in every part of the electric circuit.

It will be remembered that the burning of a factory in Philadelphia some months ago was attributed to sparks of molten copper from the coating of the carbons of an imperfectly shielded arc-lamp. More recently, in the same city, a large show window in a popular dry goods store was fired by a Jablochkoff candle. A careless attendant had neglected to screw on the brass cup below the light, and as soon as the current was turned on the fabrics in the window were ablaze from a shower of white-hot particles thrown off by the lamp. This was obviously no fault of the lamp, but the incident goes to emphasize the need of great care in its manipulation.

Even the purely incandescent electric lamp is not without its dangers, as was discovered in a Philadelphia drug house a few days ago. One of the strong claims of this method of lighting has been its alleged inability to set anything afire. The nature of the "low-tension" current supplying incandescent lamps was thought to forbid the system's ever playing the part of an incendiary, while the security of the lamps was publicly demonstrated by breaking the glowing lamp in the midst of highly inflammable stuffs. Yet, in the case just referred to, a defective lamp came very near starting a serious fire. The lamp was in use in a cellar, and except for the fortunate entrance of an employé, the fire might never have been explained. He found the wires of the lamp—a Maxim lamp—white hot, with their paraffin coating blazing up against the beam and floor above. A well directed hatchet stroke severed the wires,

and the fire was stopped. An examination showed, according to the statement of Mr. McDevitt, Superintendent of the Insurance Patrol, that of the two wires, the one that enters the side of the brass shell below the glass globe in one of the lamps, and which is supposed to be firmly held in place there by a drop of solder, was not in fact so held, but seemed to have been loosely tied to the shell with a bit of copper wire, and to have dropped down from that imperfect fasting, crossing the other wires and establishing electrical connection with it. Both wires were, of course, white hot instantly. They were covered with a heavy insulating coating, mainly composed of paraffine, and that substance burned at once. But for the timely discovery of the accident the entire establishment might have been destroyed. Upon a careful inspection being made of the other lamps on the premises, one or more was found in which the wire was simply tied on, and two others from which the drop of solder had been melted away, or else had never been there, so that the wire was loose and liable to fall at any moment.

Thus we see in one city, and within a few months, each of the types of electric lamps has been the cause of a fire. However safe, as compared with kerosene, the electric lamp will bear watching.

TRADE WITH GREAT BRITAIN.

IT is a circumstance to be deplored that, while this country's resources are amply sufficient for all of its requirements, if properly developed, it should be compelled to purchase largely of iron and hardware supplies generally. In some places throughout England blast furnaces are erected for the especial purpose of making brands of iron for the American markets.

At Great Fenton, in North Staffordshire, two of these furnaces of modern dimensions and appointments are fast approaching completion, and ore and fuel are being accumulated. The Duke of Sutherland is owner of the land and the chief proprietor of the works. It is the intention to make a brand of iron especially suitable to the United States market.

This is all very salubrious for the English, but the loose screw that drives Americans abroad for what they should find at home should be tightened up a little. The States of Virginia, South Carolina and Georgia are possessed of iron ore in abundance that should be worked. And while these lie idle the great mines of Pennsylvania are worked on half time and starvation prices to laborers, while managers of rolling mills and puddling furnaces are shut down because of a demand of operatives or employés for wages sufficient to buy bread for their families. All this while Great Britain is growing corpulent over large exports of all kinds of iron, steel and general hardware. Here in the oil country the effects of these drawbacks are not infrequently felt because iron for tankage could not be secured. As a last resort the Standard Oil Company is compelled to purchase from English dealers in order to keep pace with its demands. The fact is, the iron and cotton industries of the United States are losing ground. As regards the latter, this suggestive paragraph is found in a letter from England to the *American Manufacturer*:

"AMERICAN AND INDIAN COTTON.

"Largely elucidative of our growing trade with India, and our decreased trade with the United States, is the fact that whilst last month the cotton we received from your side fell off one million cwts. it increased from India one million two hundred thousand cwts."

So the United States gets the worst of it all around. Her ocean commerce has dwindled to a very limited degree, and the balance of trade is against her. While this has been going on, Congressmen are trying to pave the way through a dreary and miserable session for reëlection. Well, here in Oildom we are independent, thank Nature. The world and England, too, are compelled to purchase our product.

CHERRY GROVE.

GRAPHIC DESCRIPTION OF THE ENTIRE FIELD.—ITS INHABITANTS, ETC.

(Regular Cor. AGE.)

GARFIELD, August 13, 1882.—Garfield by moonlight is an interesting spot on the great oil horizon. None but those who have visited it can form any idea of its true characteristics. It does not partake of the nature of other towns that have so rapidly sprung up in the Oil Regions, remote from places of a settled character, so far as the lawlessness of the floating population is concerned. On the contrary, while it contains more able-bodied drillers and other workmen than any other spot of its size in the region, yet it can show as fine a record for the observance of law and order among the people as any other town in the country. Were all the peculiar phases of life and living in the town and vicinity given, the reader would question the

veracity of the relator. However, a few will be attempted, even at the risk of losing the confidence of the reader.

In the first place, it is perhaps well enough for everybody to know that Garfield occupies an imposing position on the great highway leading from Warren and other points on the P. & E. R. R., to Balltown and the other important localities of southern and western Forest County, which are found at intervals, extending to the Allegheny River at Tionesta. It is situated on the great ridge which divides the waters of Farnsworth Branch, Garfield Run and Arnot's Run, which flow northeastward toward the main Tionesta Creek, and those of Minister Creek, Porcupine Run, Morck and Sheriff Runs, all of which are tributaries of the Tionesta, but flow in an opposite direction from those first named. These latter form a junction with the big creek between Balltown and Foxburg, in Forest County, some six miles south of Garfield. The waters, therefore, circulate in a round-about fashion from north to south, making a large curve eastward. Between the heads of the streams above named is an elevated plateau, about 2,000 feet above sea-level. Here is where the new stock of people have settled, making the woods and fields along both sides of the public highway, for several miles in length, appear as a nucleus of a young city. The buildings are by no means all of the substantial order, many being composed of tent material, such as the boys who defended the country used on the Potomac and elsewhere. The weather being fine, the shelter offered by the pleasant shade trees, which appear to smile in their dignity over the scene, has frequently been appropriated by those who are not supplied with an abundance of the wealth of the land. The spectacle varies somewhat from that of any other development the region has witnessed. The stranger who arrives by stage from Sheffield, Farnsworth or Clarendon, the three points of shipment by the P. & E. R. R., is astonished at the number of loaded teams encountered on the way. From Farnsworth south, as well as from Clarendon, there is a plank road leading to the hill-top. These plank were, of course, constructed by the tannery establishments of Sheffield and Clarendon many years ago for the purpose of hauling logs and bark. They come in first-class play just now, as there is an immense toll charged. Twenty cents for a single, and thirty cents for, double team, and two dollars a load for boilers and engines. At this rate it will be seen the plank brings an enormous revenue, as there are about 500 teams daily, sometimes more. The roads are narrow, and stage-coaches find it very difficult to pass the loaded teams. It sometimes takes two hours to travel from Farnsworth siding, on the railroad, to the town of that name, located on the hill, just east of the well 646, about one mile. As the traveler is entirely at the mercy of the teamster, the former is compelled to plead in suppliant tones for the privilege of passing at the first opening that may be discerned. Sometimes these wretches will sit as unconcerned, and apparently as oblivious to the demands of the traveler, as a horse would be to the chatter of a squirrel. This is frequently the cause of outbursts of indignation that swell as they proceed. It is no place, therefore, for the strictly pious, though some even of this class are found in the region. It is, however, difficult to tell which is which in cases such as above related.

But the wonderful demand for material for well rigs and machinery in the field made business extremely lively for the first sixty days, after the opening of 646 especially. Here we find open for the use of the drill, lots 646, 647, 635, 619, 611, 658 and 672, forming the 45° line northeast and southwest, a distance of nearly four miles. Each lot contains about 180 acres, strict measure, and on an average, there is one well to every four acres. Aside from these lots, there are the corners of the adjoining lots, which serve to close the sides of the belt which is half a mile in width only. A peculiar characteristic of this belt is the fact that at the northwest side the sand rock is cut off so straight and perfect that it would appear as if Nature had used an immense cutting-machine in edging it up. It would appear as if the rock was formed by sea-washings, the "billows splashing" from the south, and forming a kind of bank at the northwest side, while the opposite was left ragged and diversified by the construction of sand bars. For this reason the eastern edge of the belt will doubtless be found to be somewhat checkered. Good wells may possibly be found beyond the limits of certain dry holes, which will prove the correctness of the above theory.

THE FIELD AS IT IS.

The rapid growth of the district into a large producing centre has given rise to much speculation as to the amount of oil it is destined to produce. Nearly every five-acre or four-acre lot upon which a large or even medium well can be looked for, has an oil well in some stage of pro-

gression, except portions of lots 646 and 647. The wells all start up largely, especially those located near the centre of the belt, making during the first twenty-four hours from 1,500 to 2,500 barrels. They then drop rapidly to from 300 to 500, where they seem to hold for a few weeks. At this rate, it will be seen, operating in the field should be much more profitable than in any other part of the Oil Region. The producers are of this opinion, doubtless, if their acts can be taken as an indication of what they think and believe. In many instances one-half the oil is paid as royalty, and an additional 2,000 barrels as bonus for a four-acre lot. An instance is given of an agreement to pay $5,000 by an operator, and one-half of the production for a five-acre lot on 619, the $5,000 to be paid out of the first oil produced by the well. The amount of oil that this well must produce before it begins to re-imburse its owner, therefore, would be greater than many wells in other parts of the field yield in a life-time. The statement would be about as follows: Bonus on lease to be paid with sixty-cent oil, 8,333 barrels. As half goes to the royalty or land-owner, it would require just twice this amount, or 16,666 barrels, to square up the first cost of a lease at half royalty. Then comes the cost of the well, and the enormous amount of tankage required. The pipe-lines demand 3,000 barrels, which, figured at forty cents, makes an expense of $1,200. This, with the cost of the well, at $3,200, makes a total cost of $4,400, which must come from one-half the production of the well. This would require 7,333 barrels to the working interest, or a total from well of 14,666 barrels more, or a grand total to liquidate all liabilities, of 31,332 barrels.

Of course, if all the wells should yield as the first three or four sunk, the projectors of the venture just described would come out all right. The old 646, it is said, has produced 65,000 barrels, and the Cadwalader No. 1, on lot 635, together with Murphy's No. 1, on 619, and the Mahoopany No. 1, on 611, have all ascended above the required mark. Cadwalader's is put at 42,000, Murphy's at 51,000, and Mahoopany at 32,000 barrels. It appears, however, that as the wells increase in number, the gas becomes exhausted to that extent, that it is with some difficulty the wells are kept flowing. Some stop altogether until a torpedo is inserted and exploded, when they seem to regain for a short period their former agility and strength. These fresh pulsations, however, soon subside, and many of the gushers which started at upwards of 2,000 barrels, are to-day doing not to exceed 150. How these will act when they have fallen to fifty or lower is as yet conjecture; many of them may prove to be good paying pumpers. Taking the average well, it will be required to yield about 23,000 barrels of oil to re-imburse the owner for his outlay. It is expected that a large share of those centrally located will do this, but those on the edges may fall considerably short. As to the length of the belt, there is no satisfactory evidence just yet. The drill is being urged on 681, south of 672, and this will determine, to some extent, at least, its nature at that end. It is the opinion of many good operators that the Sheffield and Tidioute highway cuts the end at the south, but this opinion is based upon the sandy foundation obtained through the Goldsborough Well, which is the farthest producer to the southwest. This, it is claimed, is much smaller than the gushers farther north. Its daily yield at this date is put at 350 barrels about one month old. Along the western edge the borders are well set. A line of dusters, commencing with the Markham & McDonald Well, on the northwest corner of 672, and passing northeastward we strike the duster of the Big Fish Oil Co., on 648, and the same of U. A. Andrews, on 610, at the southwest corner, and again on 590. Returning on the east side, we have light producers, comparatively speaking, on the southeast corner of 619, also northeast part of 618, northeast of 645, centre of 659, and southwest corner of 671, the extreme limit at the southwest. After viewing the field as it is, your correspondent is forced to conclude, that, as at the outstart, the field was somewhat over-estimated, so at the completion of the duster on 648, which was the first to appear, it was very much underestimated. If the drill proceeds, as it is expected it will, there is sufficient territory to furnish at least 35,000 barrels a day. It is not to be presumed, however, that it can maintain its best yield any great length of time. It will drop much quicker than it rose.

A WILDCAT.

The wildcat on the southwest corner of the Cooper tract has attracted some attention for a week or more. This well can be located by the AGE maps. It is on Warrant 2,991, about two miles west of the Darling Well. It is supposed to be near the line of a belt, which has existed in the minds of some, extending from the MaGee & Horton section southwestward to an unknown point. Whatever may result in future from de-

velopments that may accrue from faith in this theory, it is not certain yet that there is anything in it. This well has a show of oil, and its owners are exceedingly jubilant over prospects.

OTHER WILDCATS.

At the northeast of the Cherry Grove district the Mahoopany Co. have just completed two wells that are supposed to be dusters, and if so, effectually extinguish the light of the belt at that end. They are located on the southwest and southeast corners of lot 590. The Toles Well, on lot 452, Watson, T. P., is abandoned, and the Brown & Marsh, on lot 543, is probably another of the same sort. Some parties are starting a well two miles east of Russelburg, and two more are projected in Elk Township. So the spirit of the inevitable wildcat still prowls through the land. He may find something to devour, and, of course, he may not.

OTHER VIEWS.

This, therefore, is the casual view taken by your correspondent, without regard to the religion or politics of any person. Business is very active in all parts of the field. The home-life of the inhabitants is truly of the primitive style. In many instances all that constituted the dwelling-place of families was a few boards, elevated at one end by a pole between two trees, the other end of the boards resting on the ground. The dilapidated form of what was once a stove stood in the open air, and bed and bedding could be seen rolled in a bundle and stuck in one corner, ready for use when the proper hour arrived. Here are women and children, apparently enjoying their surroundings, all for the purpose of improving their financial conditions. Some have canvas tents, which are much more pleasant. Hundreds of these tents and slab shanties are labelled "Bottling Works," which is another name or title for whisky saloon. Small grocery stores are constructed on the same plan, having the solid earth for the ground floor and the heavens for the upper story. In

THE TOWNS OF EARNSWORTH AND GARFIELD,

Which are rivals for superiority, some more substantial structures have been erected, but an air of limited duration and "we'll have to get up and get shortly" seems to pervade everything and everybody. The houses are put together for that purpose, and the furniture they contain was in most cases provided by the use of a saw and an ax for the occasion. Strangers arriving late, however, were glad to obtain a slab bottom up, with an army blanket for a covering and his pantaloons for a pillow, in one of these houses, at the moderate cost of 50 cents a night. Drillers, as a rule, "camp out" in a shanty erected for the purpose, at the wells, and do their own culinary work.

SOME SICKNESS.

During the past month many have had to leave the field owing to an unhealthy state of their systems. This is supposed to be superinduced by the trash that bakers are in the habit of supplying. It is stated that soap is used to aid in making the bread "swell," and this results in cramps in the stomach and dysentery.

THE SURFACE.

The surface of the country is very promising for oil, being of that rough and rocky character that leads at once to the conclusion that if there was no oil in it what on earth was it made for? As stated above, there is a high ridge extending from near Clarendon, in a southwesterly direction, to the big road a mile below Garfield. The developments follow this ridge and part way down its sloping side on the west. Along the course the surface is broken in many places by huge rocks and sudden descents and ascents, making it very difficult for the transportation of material. It reaches the spot always, nevertheless, and the work goes bravely on.

THE recent shipment of 450,000 gallons of petroleum for Jeddah, Arabia, was made by Ralli Brothers, of New-York, and is the first of its kind to that destination. It was forwarded by steamer *Coventine*, and will be delivered partly at Jeddah, the seaport of Mecca, and partly at Hodeida. These places have each a population of over 20,000, and their trade has assumed importance with the development of traffic via the Suez Canal. Probably another export of petroleum direct to Jeddah will not be made for some months, unless an outburst of religious fervor causes an increased influx of pilgrims into Arabia.

As yet, the Bradford District is the great producing centre of the world, and is likely to be after sputtering Cherry Grove has passed in and out and has been recorded among the fields that were.

THE big bridge near Alton, which is being constructed by the N. Y., Lake Erie & W. Railroad, will shortly be completed, when the Great Western highway of the "Erie" will speedily be opened.

THE PETROLEUM AGE.

DEVOTED TO THE

INTERESTS OF THE PETROLEUM TRADE.

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W. A. MOSSMAN, *Business Manager.*
W. J. McCULLAGH, *Editor.*

GLYCERINE seems to be a powerful agent in the hands of Cherry Grove operators for maintaining their production.

THE Robert's Torpedo-monopoly has full sway in that field (in its mind) especially in the planting of the first shot. After that, then ——.

ALLEGANY the great has fallen. Its dial has been turned backward. Its daily output has dropped during July more than eighteen hundred barrels a day.

THERE is a map on the last page that takes the cake for perfection as well as beauty. All the important producing pools of America are marked on it correctly.

THE well at Bath, N. Y., over which there was some excitement a short time ago, is not of the dangerous stripe, if the statements as gleaned from trustworthy sources are true.

WHO will attempt to find the millions of dollars deposited in worthless territory surrounding the Cherry Grove rivulet? The men who stuck to the AGE red lines are happy.

THE year 1882 is destined to pass out a lucky one to "General Average." This commander has had things pretty nearly his own way so far, and the hour of bombardment has about passed.

THE mystery on the Cooper tract does not promise to make another Cherry Grove gusher. It has a show of oil, however, and may lead to something of more worth in the neighborhood. It is the general belief of the trade that Forest County is destined to develop something of value some day. Thus far, however, her sand deposit has not been found to be of the first-class order.

CHERRY GROVE'S aggregate does not enlarge as rapidly as some expected. It increases constantly, and will doubtless reach the altitude proposed by the AGE a month ago. It is now rated at 30,000 barrels.

THE production of the Bradford field declines more slowly since the cessation of drilling than previously. In some localities wells do not decline ten per cent. in as many months after they have descended to a three or four-barrel rate.

THE big suit for the right of title to the Richardson Farm, in the Allegany field, between the McCalmont Oil Co. and Shepherd, of Olean, was argued on the 9th inst. at Buffalo. The circumstances of this case were given last month, viz.: About seventeen years ago Shepherd obtained a lease of the farm for oil purposes, but never operated it. The McCalmont Oil Co. purchased the farm, having advice that the lease of Shepherd was forfeited. Judge Haight heard the evidence, but has not yet rendered a decision in the case.

THE heavy oil report found elsewhere is peculiarly in contrast with that of the light oil, as regards the production of the new wells. Thirty-one wells in the Franklin district make 41¾ barrels per day, the average being $1\frac{34}{100}$ barrels to each well. It should be remembered, however, that heavy oil operators drill wells at a cost very much below that of the light oil driller, and one barrel of heavy production is equal in value to about three barrels of the light. Heavy oil operating is a profitable business, and is destined to be more so in the near future.

THE oil business just now is in a very peculiar state of health. It is receiving the attention of the oil doctors, but serious trouble arises from the fact that these disagree as to the probable outcome, either in the near or remote future. The old-school fellows behold the rising scab of Butler County with grave fears, while the new look upon it as of little "matter." As a rule, however, if the pulse of all the doctors can be obtained regarding the future condition of the patient, a proper estimate of the outcome may be ma'e. This is accomplished, by taking the opposite view from the physicians. The oil patient always stirs himself up when he is supposed to be the sickest, and takes to vomiting when least expected — as with 646.

Some of the daily papers are deeply engaged discussing the probable origin of petroleum. They generally cease, however, before arriving at any satisfactory conclusion. It is a very serious problem, and if not soon solved may result in the production of another crank. To the producer of oil it is a matter of small moment whence the stuff comes, or whither it goeth, so long as he can fill a 1,000-barrel tank with it in twenty-four hours, by boring a hole into the ground. He doesn't care a cent whether it was originally made of wind, worms or wax; it's plenty of oil, at 60 cents a barrel, he is after.

The descriptive article on Cherry Grove, from a regular correspondent of the Age, will be read with pleasure, especially by those residing at a distance. It gives in a clear and lucid manner the peculiar characteristics of life in the great district, and facts and figures relating to production of an interesting nature are also given. The fact, as shown by him, that over 31,000 barrels of oil must be produced by some of the wells in order to reap first cost is a rather discouraging feature of the well business of that or any other field. The description given of home life and the country generally is remarkable, and only shows how a mining excitement effects the populace wherever or whenever it occurs. The weather just now is favorable to out-door life, and for this reason there is more of that species of settlers than there otherwise would be.

Strikes do not always succeed, nor do they always result in even a fair hearing to the rebels. In no place was this more plainly shown than at McKeesport during the first week of July, where the employees of the iron mills — all union men — struck for an advance in wages. Their places being immediately filled with non-union men, a riot was feared, and was actually threatened, and, it may be said, attempted. The good citizens, acting in accord with the village authorities, however, put a veto on that kind of business, and the works proceed as if nothing had happened. Concerted action by employés, in the matter of demands upon employers, should be made a subject of legislation, resulting in an act declaring it a criminal offense equal in magnitude to "conspiracy to defraud." This would very soon put an end to the strike business. Laboring men are entitled to all they can obtain as wages, but labor is worth just what it can be purchased for, and no more.

Walter Horton, Esq., is quite an oil theorist, notwithstanding the fact that his attention has been given principally to the "cultivation" of sole leather. He was the moving spirit in digging out the MaGee & Horton section of the Warren District, and also had his hand in the Darling and Blue Jay pie, when they were exhibited to the notice of the trade over a year ago. Mr. Horton affirms that there is another rich deposit in his neighborhood, and when the price of oil warrants it, he will have something to do about developing it. The gentleman does not want for territory, as he can travel ten miles in one direction, at nearly all points of the compass, and not step off soil in which he is interested. Forty thousand acres covers a large portion of earth. It would make a big pool if such sand as that of Cherry Grove underlay it, but all sands have a deplorable disposition to run in streaks. It is another of these that Mr. Horton has in view.

Mr. E. G. Patterson, a stockholder in the Tide Water Pipe Line, has instituted proceedings to prevent the managers of the corporation from extending the operations of the line beyond the limits set by the stockholders, and without their knowledge and consent. He also asks the Court, while granting this restraining petition, to invite the managers to show cause why they should not make a statement of finances, etc. It would strike the Age as a more feasible plan for the stockholders, Mr. Patterson included, to call a meeting of the body, and quietly state grievances, if there were any. If, at such meeting, the managers refused to satisfy the demands of stockholders, there is a remedy powerful and easily obtained. A two-thirds vote, in number and value of interests, will accomplish almost anything in the direction indicated. It would seem as if the Tide Water Line had been managed with remarkable executive ability, but, of course, if stockholders did not complain, it is not to be presumed that anybody else would. The managers have recently begun operations on an extension of the line to the Warren field, which may have given rise to misgivings on the part of Mr. Patterson and others as to the practicability of such an undertaking. Whatever the present or immediate future might promise of reward for such expenditure, it is quite safe to assume that the time *is* coming when a large share of the oil produced in the State will be brought from the *archives* of Warren and Forest Counties, even after Cherry Grove has rendered up

her account. It would, therefore, hardly seem like a fruitless undertaking for any pipe line to expand itself so as to take in Warren County.

OIL POLITICS.

THE AGE has no interest in politics except so far as it affects the petroleum industry. It cannot help watching closely the honorable gentlemen, however, who have been called to represent the Oil Regions in the various halls of legislation, both State and National. Questions touching upon taxation, which come up in one form and another, are always of more or less interest to every citizen. The Oil Region asks no favors in this regard, however, and it would probably receive none were it forced to make the plea. But it is not certain that something may not transpire in the future when it would be found of great value to have the region properly represented—that is, by men who could be depended upon for support in the right direction. Wherever possible, therefore, to wedge in a representative to the State or National halls, effort should be made to that end. During the past two years it has been demonstrated beyond a doubt that, but for the presence of men in our State Legislature who were possessed of the right species of character and honesty of purpose the Region would now be suffering from a burden of taxation of their only product. It was well that the various sections had the foresight to make such selections. In Congress, however, it strikes us we are not so safely housed. We regret to be compelled to admit that Hon. R. J. C. Walker, our only oil representative in that great body, so far forgot his own personal interest, to say nothing of those of his Oil Region constituency, as to cast his ballot for what is properly termed the great River and Harbor steal on its passage, and then dodge the question on the veto. Dodging is bad business. We cannot afford to have representatives who will have any connection with such disreputable legislation or in any way aid or assist in the work. We want men of another stamp. A few are now before the people from the region in the attitude of petitioners to their respective party conventions for nomination to the candidacy. For Congress there is one on the regular Republican track, Hon. W. W. Brown, whom we should not fear to uphold as an upright oil man, and one who would see, to his ability, to the needs of this country. Then, moreover, McKean County, Penn., was organized in 1804, and has never been represented in Congress; the wealthiest county, perhaps, in the United States. Last year it produced 67,779,252 barrels of oil which, at the low price of the product, an average for the year of 86 cents, brought $58,290,155 to the producers and furnished an article of export greater than all others except cotton and cereals. This is principally the work of McKean County, Pa. We therefore ask for a Congressman, and one whose interests lie here.

THE REAL ESTATE MARKET.

THE tide of investment changed the direction of its flow during July, and the beginning of August. Up to the date of the advent of the Whale Duster, on lot 648, which occurred about July 14th, the Warren field commanded the attention of perhaps seven-eighths of all the capital seeking anchor for a month prior to that time. The result of this venture, however, so changed the aspect as to cause a general stampede, of would-be purchasers, for Allegany and Bradford. Prices dropped on all territory in the Cherry Grove district, considered in the least doubtful, fully 50 per cent. in ten minutes after the effects of the shock of disappointment were first felt. In fact, a limit to the field on the West was at once fixed, and beyond that no value whatever was placed upon territory, though much of it had previously changed hands at enormous figures. The "line of limitation" was so palpably set, that few mistakes have since been made, and, as a consequence, property which now changes proprietorship is of the certain class, and at rates about equal to any former time, though oil, as a rule, is taken as bonus instead of the hard cash formerly demanded. When once the tide of speculation sets out from a district it seldom ever returns, except to "land" more easily and more cheaply. This is certainly true of Cherry Grove to-day.

The desire seems to be to expend money in developing something new instead of paying such enormous prices for that which is developed. As a result, wild-cat wells are starting in nearly all parts of Warren County; and, aside from this, there seems also to exist an itching for drilling in the Allegany field. In the latter, prices for producing properties are 50 per cent. higher than they were one month ago, and sales are more numerous even under these circumstances. In the Warren field, while the aggregate of sales exceeds both the other districts, yet this resulted from numerous transactions of

smaller dimensions than during the previous month. The sales and resales were principally in well and leasehold property. Wells situated on "dead sure" territory are rated from $10,000 to $15,000, and one-fourth royalty, five acres of ground. On the outskirts no general rule governs. As in other fields, holders who desire to sell, take the best offer made them, and this is generally kept quiet. During the month 82 transactions were recorded, aggregating $435,000 against $1,500,000 the month previous.

ALLEGANY.

In the Allegany field there has been much activity. Soon after the striking of 646, prices for production, dropped to about $1.00 a barrel net, and a few transactions occurred at these figures. A revival set in, however, immediately after the first shock felt by Cherry Grove, and since that time confidence has been gaining strength. At least $320,000 worth of property changed hands during the period from the time named up to the 3d inst. The sales number in all about 25, the largest being $70,000. This was reported to be a purchase by Forman and others.

BRADFORD.

In the Bradford district there is a much greater inquiry than has existed for the past 90 days; about 15 transactions came to the ear of the AGE, aggregating $110,230, these were all under $25,000. This inquiry continues at this date and it can safely be stated that producing property in this field is from 20 to 30 per cent. higher (and will actually command the money) than it was 60 days ago. A better feeling exists all around. Outsiders who have never invested a dollar in oil prior to the recent drop are apparently very anxious to obtain a foothold at the low prices, either in territory or the oil itself. People residing at great distances, but having friends in the oil regions, forward the money to the latter, with the request that it be invested in oil. For this reason, it is not probable that production on thoroughly tested territory, or even that which is completely drilled, will undergo any marked depreciation in the immediate future. When the rapid decline occurred a short time ago, the AGE pointed out the important opportunity afforded to capitalists. As usual, the astute did not wait for any pointers. They seized the first chance, and have won.

BALD RIDGE.

In the Bald Ridge Country there has been some speculation during the month. Prices are booming slowly, however, notwithstanding the fact of a couple of large new wells. The territory is treacherous, however, and speculation is as yet quite limited. There were 13 sales reported, aggregating $85,000, besides a number of leases at small bonuses. Altogether the business is more healthy, and the tone more encouraging, than a month ago.

The aggregate of transactions of all districts was as follows:

DISTRICT.	TRANSACTIONS.	VALUE.
Warren,	82	$435,000.00
Allegany,	25	320,000.00
Bradford,	15	110,230.00
Butler,	13	85,000.00
Totals,	135	$950,230.00

THE ALLEGANY FIELD.

TABLE SHOWING THE PROGRESS OF DEVELOPMENTS AND PRODUCTION OF THE ALLEGANY (N. Y.) FIELD.

MONTH.	No. of wells completed.	Dry.	Production. Bbls.	Average per well.	Daily Production of Field. Bbls.	Drilling.	Rigs.	Stocks in wooden tanks. Bbls.	Stocks in Iron tanks. Bbls.
Total, 1880	8	42	76	9½	76	4	6	. . .	. . .
Jan'y, '81,	4	2	18	9	94	4	5	. . .	. . .
February	4	1	24	6	112	4	8	. . .	. . .
March .	5	2	60	12	162	4	7	. . .	. . .
April . .	3	1	20	10	170	5	6	. . .	. . .
May . .	4	1	48	12	212	20	21	. . .	. . .
June . .	14	8	130	9¼	327	24	35	. . .	. . .
July . .	22	5	275	12½	588	47	57	. . .	. . .
August .	53	17	586	11	1080	62	68	. . .	. . .
September	63	11	910	14½	1740	105	118	. . .	. . .
October .	96	5	1432	15	2896	164	198	38000	108891
November	154	10	2732	17½	5180	155	200	84666	142216
December	196	2	5115	26 1/10	8937	187	204	180200	169250
Jan. 31, '82,	162	2	3914	24 1/6	11123	191	209	270860	243147
Feb. 28th	189	4	4154	21.97	13200	212	201	373460	258247
March 31st	216	2	5580	25.83	16000	215	221	374490	359347
April 30th	257	6	6356	24¾	20760	226	230	400000	417347
May . .	265	7	5992	22⅝	22438	179	191	440000	542347
June . .	163	11	3605	12	22220	94	153	475000	650000
July . . .	81	. .	1488	18⅓	19391	45	123	375000	550000

THE production of this field is falling more rapidly since the first of August than usual. Many of the wells are producing less than four barrels a day. It is a question of some interest where this depreciation will cease. There is some territory yet to drill, but at present the operators do not seem very much inclined in this direction. Two weeks ago they felt somewhat encouraged over reports from Cherry Grove, but, notwithstanding the cheapness of drilling in comparison with the latter field, the discouragements presented by obtaining a 10-barrel well, in opposition to a 1,000-barrel gusher, are too great. Therefore, it is not likely that much will be done here during the season.

REPORT
OF
OIL OPERATIONS FOR JULY.

WELLS COMPLETED.

Bradford District.

EAST BRANCH.

Lot.	*Operator.*	*Production.*
	Clapp, J. M. Clapp, No. 43	20
	Morris, Emory Oil Co., No. 40	15
	Taylor, Atlas Oil Co., No. 1	15
	DeGolier, Quintuple Oil Co., No. 14	12

WEST BRANCH.

	Pease, George Pease	10
	Chattel, Lewis & Co.	dry
	Wells	6
	Production	72
	Average	12

QUINTUPLE.

Lot 208,	Farrand & Farmer	15
295,	Theo. Barnsdall	20

FOSTER BROOK.

	C. B. & H., A. J. Caldron	10
	" L. W. Eighmie	10

KENDALL CREEK.

	Book, Hazlewood Oil Co., No. 44	20
	Monroe, Hyde & Simpson	15
	Kilbury, Kilbury & Williams	12
	Schoonover, Jane Schoonover	10

SUMMIT AND RIXFORD.

	Berger, P. T. & W. C. Kennedy	12

OIL VALLEY.

	Borden, Forman & Union Oil Co., No. 15	10
	" Forman & Lawton, No. 15	15
	" Fertig & Henne	15

INDIAN CREEK.

	Hamlin, Mallory Bros.,	15
	Wells	13
	Production	179
	Average	13¾

BIG SHANTY.

	Lafayette, Bayne, Fuller & Co.	20
	Dent Lands, Whitney & Wheeler, No. 13	20

KINZUA.

	Bingham, Carter & Hurd, No. 13	20
	Chapin, O'Hare	dry

COLE CREEK AND BINGHAM ESTATE.

Lot 439,	J. L. McKinney & Co., No. 22	30
416,	Lee & Apple, No. 5	20
495,	Forman & Union Oil Co., No. 10	15
491,	" " " 14	15
495,	" " " 19	15
492,	Johnson & Union Oil Co., No. 45b	15
	Simpson, Geo. V. Forman, No. 12	30
	Wells	11
	Production	200
	Average	18

THE ALLEGANY FIELD.

ALMA.

Lot 1,	Phillips Bros.	10
2,	Blatchley & Lown	15
17,	Scott & Elliott, No. 6	12
17,	Chamberlain & Co.	15
22,	Wheeler & Newton, est.	12
22,	Duke & Norton Oil Co., No. 24, est.	15
22,	" " " 25, "	15
79,	Baker & Co., est.	3
100,	Meser & Co., est.	3
	Wells completed	9
	Production	100
	Average	11

BOLIVAR.

Lot 2,	Scott & Elliott	dry
6,	Star Oil Co., No. 9	15
6,	McCoy & Weater	15
6,	Penzer & Love	15
6,	Wesley Chambers	18
22,	Geo. K. Anderson	10
31,	Shreeves, Lowrey & Co., No. 6	15
32,	Chauncey Oil Co., No. 12	20
37,	J. B. Plummer & Co.	10
37,	J. Moran	10
38,	W. & A. Cochran	30
38,	"	35
38,	"	20
38,	Lemex & Co.	20
38,	Fisher Oil Co.	20
38,	Schoonmaker & Co.	18
38,	Metcalf & Co.	18
38,	Frank J. Clemenger	15
38,	Weiser & Kinkaid	20
38,	"	20
38,	"	25
39,	J. McVey	15
39,	Capt Stevens	15
39,	Smith & Wellman	20
39,	"	20
39,	"	25
40,	Meldrum Oil Co., No. 16	20
40,	Steele & Booth	18
40,	Smith & Zeigler, No. 14	20
40,	" " 15	25
40,	McCalmot Oil Co.	20
46,	Polar Oil Co.	20
46,	Clark & Davis, No. 4	30
46,	" " 5	35
46,	Forman & Weiser Bros., No. 2	25
46,	" " " 3	30
46,	" " " 4	20
46,	Chauncey Oil Co., No. 1	55
47,	J. Varney, No. 20	15
47,	" " 21	20
47,	Whitney & Good	25
47,	A. J. Thompson, No. 6	20
47,	" " 7	20
47,	" " 25	15
47,	Hefferman & Hanley, No. 17	15
48,	McCalmot Oil Co.	20
48,	Steele & Plummer, No. 5	18
48,	" " 6	20
52,	Shirley & Hackett	dry
55,	Hogan & Murphy	15
55,	Columbia Oil Co., No. 6	20
63,	" No. 1	25
64,	Thompson & Huver, No. 15	20
	Wells	53
	Production	1055
	Average	20

WIRT.

Lot 17,	Taylor & Humphrey, No. 5	20
33,	Taylor & Allen, No. 12	20
33,	Wellman, Miner & Fuller	15
33,	" "	15
33,	Wirt Oil Co.	20
41,	Wellman, Miner & Pitts	10
41,	Alfred Oil Co.	10
41,	Mattock & Taylor	10
	Wells	6
	Production	120
	Average	20

GENESEE.

Lot 7,	Weiser Bros.	15
7,	I. E. Dean	20
7,	McCalmont Oil Co.	20
8,	Willets Bros., No. 25	15
16,	Wilson Bros.	15
16,	Carlin Bros. & Golden	15
16,	A. P. Tanner	15
24,	Daggatt Oil Co., No. 20	20
24,	Barton & Warner	20
24,	Galey Bros.	20
30,	Bennie & Gordon.	20

CLARKSVILLE.

9,	Capt. Britt	10

SCIO.

2,	Fred. Bosch	8
	Steuben, Steuben Co.	dry
	Wells	14
	Production	213
	Average	16⅔

THE LOWER FIELD.

BYROM CENTRE.

D. M. Crawford & Co., D. M. Crawford farm	3
J. P. Crawford & Son, A. Say farm	3
Duncan & Dodd, second sand, Sloan farm	30
Grant Bros. & Co., Alex. Grant	gas

BALD RIDGE.

Sheidmantle, Sheidmantle	50
Clarion County, various parties, 2 wells	8
Venango " " " 1 "	dry
" " " " 2 "	8
Titusville. " " 1 "	6
Wells	9
Production	108
Average	12
Total wells	189
Total production of new wells	19,715

WARREN COUNTY.

CHERRY GROVE.

Lot 610,	Bayne, Fuller & Co.	100
610,	Barnsdall Bros.	200
610,	J. Bryan	300
610,	Armor, Hayes & Roth	500
610,	Munhall & Smithman	700
611,	Forest Oil Co., No. 5, est	900
611,	" " 8	700
618,	C. K. Book	250
618,	J. M. Guffey	350
619,	Christy Bros., div. 4	500
619,	M. Murphy, No. 2	100
619,	" " 3	300
619,	Tack Bro's, div. 12	300
619,	Fertig & Clark	400
620,	Carter & Hurd, No. 1	250
620,	D. Brown	200
620,	Book & Co., div. 9	200
620,	" " 8	300
620,	J. Snow, div. 2	500
633,	Murphy & Co.	dry
634,	Union Oil Company	150
635,	Berry & Kelly, div. 3J	800
635,	Stafford & Barnsdall, div. 4	600
635,	Zeigler & Smith, div. 5	500
635,	J. R. Goldsborough, div. 7	75
635,	Harris & Merrick	300
635,	Nickle Oil Co., div. 9	200
635,	Clark & Goldsborough, div. 10	150
635,	A. P. Tanner, div. 11	150
635,	A. Sheidmantle, div. 12	200
635,	Chaldron Bro's & Lecky, div. 13	150
635,	" " 20	200
635,	Gilson & Griffith, div. 18	300
635,	W. Allshouse, div. 14	200
635,	C. Cramer, div. 20	200
635,	Cedar Oil Co., div. 21	200
635,	Thompson & Andrews, div. 22	350
635,	Babcock, Thayer & Co., div. 23	300
635,	S. Comfort, div. 25	250
635,	Valiant Oil Co., div. 26	200
635,	C. Miller, div. 27	300
635,	Eaton & Howe, div. 7	300
636,	Northwestern Oil Co., div. 2	300
645,	Kervin & Glatsau	100
646,	Union Oil Co., No. 2	400
646,	" " 3	500
646,	" " 5	600
647,	Anchor Oil Co., " 1	200
647,	" " 2	300
647,	" " 4	400
648,	Whale Oil Co.	dry
658,	Wolf & Co.	1000
659,	Wetmore & Co.	50
669,	Anchor Oil Co.	15
671,	R. E. Green	50
672,	J. R. Goldsborough	250
672,	T. Mullen, Jr.	300
	Wells	65
	Production	17590
	Average	314

CLARENDON.

Lot 78,	W. Beatty	8
80,	Barnsdall & Co.	15
498,	F. Pratt & Co.	18
556,	Custer City Oil Co.	5
546,	Leopold Bro's	5

SHEFFIELD.

Lot 396,	Horton & Crary	12
397,	Geo. Wetmore & Co.	10

MISCELLANEOUS.

Pleasant twp., S. Tolles	dry
Glade, Nesmith & Co.	5
5211, Tionesta Oil Co.	dry
5102, Unknown	dry
Fox, Blue Jay Oil Co.	dry
Wells	12
Production	78
Average	6½

DRILLING WELLS.

BRADFORD DISTRICT.

EAST BRANCH.

Lot.	*Operator.*	*District.*
	Gregg, McIntire	100
	Hawkins, P. C. L., & P. Co., & P. T. Kennedy, No. 11	rig
	Stettheimer, Burrows & Hazleton, No. 6	rig
	Clapp, J. M. Clapp, No. 11	rig
	" " " " 39	400
	Newell, J. S. Book & Co., No. 15	rig
	Lewis Run, C. S. Whitney, shut down	1200
	" "	rig
	Deiter, Emery Oil Co., No. 20	sand
	" " " 21	rig
	Morris, " " 38	1200
	" " " 28	1200
	Tibbetts, " " 5	200
	" " " 8	1000

WEST BRANCH.

Cooker, Jennings & Co . . . . . rig
Cranmer, Chapin & Co., ... rig
Mack, " No. 7 . . . . . rig
Stinson, J. G. Williams . . . . . rig

Drilling 8
Rigs 10

QUINTUPLE.

Lot 19, E. K. West . . . . . rig
25, J. S. Wilson . . . . . rig
50, B. F. Brinton 500
175, D. Atwater & Co. . . . . rig
176, H. A. Booth & Co. . . . . rig
202, Butler & Martin . . . . . rig
203, " . . . . . rig
260, E. T. Howes . . . . . rig
295, Theo. Barnsdell 700

Drilling 2
Rigs 7

KENDALL CREEK.

Book, Hazlewood Oil Co., No. 45, fishing . .sand
Storms, Wright & Sowers . . . . . rig

SUMMIT AND RIXFORD.

Dodge, Dodge & Clark . . . . . rig
Irons, Duke Centre Gas Co. . . . . rig
Leedom, Robert Gregg . . . . . rig

FOSTER BROOK.

Willets, O. Smith Oil Co. . . . . rig
" I. Millets . . . . . 2 rigs
" Willets & Co. . . . . 2 rigs
Cronan, J. W. Murry & Co. . . . . rig
E. T. & Co., F. W. Mitchell, No. 3 . . . . . rig
Lynch, Lynch & McMurray . . . . . rig
Childs, O. A. Childs & Co . . . . . rig
C. B. & H., Treat & Porterfield . . . . . 2 rigs
" Baum & Richardson . . . . . rig
" Burns & Monroe . . . . . rig

Drilling 1
Rigs 17

OIL VALLEY.

Duke, C. H. Coffin & Co . . . . . rig
Fullerton, Angell Oil Co. . . . . 4 rigs
Angell, " . . . . . 4 rigs
" James Smith . . . . . rig
" Weir & Steel . . . . . rig

INDIAN CREEK.

Miles Loup, James O'Neil, No. 10 . . . . . rig
" " " 11 . . . . . rig
" Hart & Hicks, No. 22 . . . . . rig
H. Loup, J. D. Downing & Co. . . . . 2 rigs
Pine Lot, Evans Bros. & Co. . . . . rig
Barse, J. D. Downing . . . . . rig
" Bussell & Urquhart . . . . . rig
L. Loup, Follett Bros . . . . . 3 rigs
Keyes, Indian Creek Oil Co. . . . . rig
Dodge, Frank Hardwick . . . . . rig
Gale, Curtis & Taylor, No. 6 . . . . . rig
" " " 7 . . . . . rig
" Moore & Watson . . . . . rig

FOUR MILE.

McCartney, G. W. Funk, No. 3 . . . . . rig
Donahue, Brown & Norris . . . . . rig
Van Campen, Geo. Van Campen, Sr. . . . . rig
Waters, Chas. Galespie . . . . . rig
Bucher, Wm. Bucher 300
Shattuck, Waco Oil Co . . . . . 4 rigs
Howard, Merrill & Perrin, No. 19 . . . . . rig

KINZUA.

Bingham, J. M. & Thos. Tait . . . . . rig

DEW DROP.

Jamison, Jamison & Co . . . . . rig
Chapel Fork, Brown & Co . . . . . rig

Drilling 1
Rigs 39

COLE CREEK AND BINGHAM ESTATE.

M. W. & H. pur., W. W. Thompson . . . . rig
" " " " . . . . rig
G. & Van V. pur., Union Oil Co., No. 25 . . rig
" " " " " 26 . . rig
Lot 399, Forest Oil Co., No. 28 . . . . . rig
399, " " 29 . . . . . rig
394, P. T. & W. C. Kennedy, No. 8 . . rig
394, " " " " 9 . . rig
405, Forest Oil Co., No. 9 . . . . . rig
405, " " 10 . . . . . rig
416, Lee & Apple, No. 4 . . . . . rig
416, " " 8 . . . . . rig
416, " " 9 . . . . . rig
424, Forman & Union Oil Co., No. 20 . . rig
492, Johnson & Union Oil Co., No. 38b . rig
492, " " " 39b . rig
423, Newell & Palmer . . . . . rig
439, J. L. McKinney & Co., No. 23 . . rig
439, " " " 24 . . rig
Forman, Geo. V. Forman, No. 7 . . . . drilling
" " " . . . . . 2 rigs

BIG SHANTY.

Dent lands, P. C. L. & P. Co . . . . . 2 rigs
" Bowen, Wilcox & Co., shut down 240
" Whitney & Wheeler, No. 15 . . . 1400
Bingham, Fertig & Henne, No. 9 . . . . . rig
" Hamlin & Rose, No. 8 . . . . . rig
Sullivan, Mills & Mullin . . . . . 3 rigs
" Book & Co., No. 6 . . . . . rig
Warrant 2,256, Bennett & Mullin, shut down .sand

Drilling 4
Rigs 27

ALLEGANY FIELD.

ALMA.

Lot 1, A. Jackson . . . . . rig
2, Morse & Hardison . . . . . 2 rigs
17, Scott & Elliott, No. 7 . . . . . rig
17, Lewis & Co . . . . . rig
17, Bellamy & Elliott . . . . . 2 rigs
18, G. M. Barney 400
18, " . . . . . rig
18, O. P. Taylor . . . . . .sand
18, " . . . . . 3 rigs
18, Mrs. O. P. Taylor, fishing . . . . .sand
18, " . . . . . rig
22-38, Duke & Norton Oil Co., No. 27 . rig
22-38, " . . . . . rig
23, Anderson, Otis & Co. . . . . 2 rigs
23, Anderson . . . . . 2 rigs
38, Snow & Co . . . . . 2 rigs
40, Deweese & Weaver, shut down . .sand
51, Nicholson & Co. 500
54, Durkee, Young & Co. . . . . rig
69, Baker & Co. 100
143, Bush & Cole, shut down 500

Drilling 7
Rigs 21

BOLIVAR.

Lot 5, Star Oil Co., No. 5 . . . . . rig
6, McCoy & Weater 700
6, Pentzer & Love, No. 5 . . . . . rig
6, Warner & Collins . . . . . .sand
14, Carroll Bros. . . . . rig
15, Empire Gas Co. . . . . rig
16, " . . . . . rig
16, Peck & Freeman . . . . . 2 rigs
23, Johnson & Conroy . . . . . rig
24, Empire Gas Co. . . . . rig
24, Taylor & Co. . . . . rig
24, Barrett & Johnson, shut down . . . 500
31, Ballard & Forman . . . . . rig
32, Wm. Sawyer . . . . . rig
32, Short & Son, No. 9 . . . . . rig
32, " " 10 . . . . . rig
32, Manning & Co., No. 4 500
32, " " 5 . . . . . rig
37, Unknown . . . . . rig
38, Fisher Oil Co., No. 10 . . . . . rig
38, W. & A. Cochran . . . . . .drilling
38, " . . . . . rig
38, Glass & Co . . . . . rig
38, Curtis & Williams . . . . . rig
38, Geary, Hanley & O'Shay . . . . . rig
38, J. G. Haymaker, shut down . . . .sand
38, Kervin & Allhouse, No. 4, shut down 900
38, Weiser & Kinkaid 400
39, A. A. Richardson, No. 11 . . . . . rig
39, Smith & Wellman, No. 11 1100
39, " No. 12 300
39, " No. 13 . . . rig bldg
40, Meldrum Oil Co., No. 17 . . . . . rig
40, Smith & Zeigler, No. 16 . . . . . rig
40, " " 17 . . . . . rig
46, Polar Oil Co. . . . . .drilling
46, Clark & Davis, No. 6 300
46, " " 7 200
46, " " 8 . . . . . rig
46, Williams & Reed . . . . . rig
46, Forman & Weiser, No. 5 600
46, " " 6 400
46, " " 7 . . . . rig bldg
46, Weiser & Kinkaid, No. 8 200
46, " " 9 400
46, " " 10 . . . . . rig
46, " " 11 . . . rig bldg
46, McLeod Bros., No. 4 700
46, " " 5 . . . . . rig bldg
46, Chauncey Oil Co., No. 2. . . . . rig
47, J. Varney, No. 22 200
47, A. J. Thompson . . . . . rig
47, Hefferman & Hanley, No. 5 . . . . rig
47, Anderson, Greenlee & Russell . . . rig
50, Workmen, Gaskell& Co . . . . . rig
54, Patterson, Kittenger & Kern . . . . rig
55, Knapp Lease Oil Co., No. 5 700
55, McCracken Bros. & Elliason, No. 11 rig
55, Columbia Oil Co . . . . . 6 rigs
55, Weaver Bros. & Lavens . . . . . rig
62, Book & Rhodes . . . . . rig
63, Northrup & Co. . . . . 2 rigs
64, Thompson & Huver . . . . . 2 rigs

Drilling 20
Rigs 51

WIRT.

Lot 17, Taylor & Humphrey, No. 6 . . . . rig
17, " " " 7 . . . . rig
17, " " " 8 . . . . rig
25, Hazlewood Oil Co., No. 26 . . . . . rig
25, " " 27 . . . . . rig
25, Barnsdall & Co 400
25, Lem Whitney . . . . . rig
33, Taylor & Allen, No. 13 . . . . .sand
33, " . . . . . 2 rigs
33, Wellman, Miner & Fuller 900
33, " 800
33, " . . . . . rig
33, Knox Bros. . . . . rig
41, Wellman, Miner & Pitts 600
41, " . . . . . 2 rigs
49, Finnegan, Nelson & Wall, No. 4 . . rig
49, Coast & Son (Griffin) . . . . . rig
49, A. A. Richardson . . . . . rig
57, A. J. Thompson, No. 12 . . . . drilling
57, " " 13 . . . . . rig

Drilling 6
Rigs 16

GENESEE.

Lot 7, I. E. Dean . . . . . 2 rigs
7, McCalmont Oil Co . . . . . 6 rigs
8, I. Willets, No. 26 300
8, " . . . . . rig
8, McDougall Oil Co., No. 22 . . . . rig
8, " " " 24 . . . . rig
16, Taylor, Hill & Smith . . . . . rig
16, Morrison & Bennett . . . . . rig
16, D. W. Canfield . . . . . rig
16, G. S. Bussell . . . . . rig
17, P. F. Bunnell . . . . . rig
21, Willets & Cranston . . . . . rig
21, Dart & Co., fishing . . . . . .sand
21, Love Bros . . . . . drilling
23, Hughes . . . . . rig
24, Willets & Cranston . . . . . .sand
24, Daggett Oil Co., No. 17 . . . . . rig
24, " . . . . . rig
24, " . . . . . rig bldg
24, Hammond & Barton . . . . . 2 rigs bldg
24, Book & Gartland . . . . . rig
24, Galey Bros 300
29, Willets & Cranston . . . . . rig
30, Wales . . . . . rig
30, Bennie & Wales . . . . . drill

Drilling 7
Rigs 25

CLARKSVILLE.

Lot 1, Knox Bros. 400
1, " . . . . . rig
9, Meal Ticket Oil Co . . . . . rig
10, Smith & Gleason . . . . . rig
17, Huston & Brecht, No. 4 . . . . drilling
17, " . . . . . rig
17, Duke Centre Oil Co . . . . . 2 rigs
19, Pratt & Fink . . . . . .sand

SCIO.

Lot 2, Morse & Hardison . . . . . rig
2, Nameless Oil Co., No. 3 . . . . . rig
3, Wheeler & Co . . . . . rig
3, O. P. Taylor . . . . . .sand

Drilling 4
Rigs 9

MISCELLANEOUS.

BATH.

Bath Oil Co 1300

HINSDALE.

Unknown . . . . . rig

Drilling 1
Rigs 1

WARREN COUNTY.

CHERRY GROVE.

Lot 584, Goettel Bros. 600
589, Wilcox & Hamlin 200
590, Mahoopany Oil Co., No. 2 700
608, Cornen Bros. 1100
610, King Oil Co. 100
610, Pentzer & Co. . . . . rig bldg
610, Broder Oil Co. . . . . .sand
610, M. Mattison 200
610, H. Argue 700
610, Ingham & Co. 200
610, J. O. Johnson 600
610, Andy Smith . . . . . rig bldg
610, Armor, Hays & Roth, No. 2 200
610, " " 3 . . . . rig
610, " " 4 . . rig bldg
610, Munhall & Smithman, No. 2 1000
610, " " 3 500
610, " " 4 300
610, " " 5 . . . . rig
610, Minard Run Oil Co., No. 1 1200
610, " " 2 . . . . rig

Lot 611, Forest Oil Co., No. 2 600
611, " " 4 . . . . . rig
611, " " 6 . . . . . sand
611, " " 7 800
611, " " 9 . . . . . rig bldg
612, Fisher Bros. . . . . rig bldg
618, C. K. Book, No. 2 1100
618, Anchor Oil Co., ... rig
618, Armstrong & Co. . . . . rig
618, Bailey & Co. . . . . rig
618, R. Sterrett . . . . . rig bldg
619, A. A. Richardson, div. 1 400
619, Zeigler & Smith, div. 2 300
619, " " 3 1000
619, Christy Bros., div. 5 600
619, J. R. Morse, div. 6 400
619, I. M. Taylor, div. 7 300
619, Zeigler & Smith, div. 8 . . . . . sand
619, John Markham, div. 9 200
619, J. H. Van Wormer, div. 10 . . . rig bldg
619, " " 11 1400
619, A. A. Richardson, div. 12 1500
619, " " 13 1000
619, P. A. Derby, div. 14 600
619, Whitehead & Taylor, div. 15 . . . . rig
619, Long, Smith & Co., div. 16 400
619, Polar Oil Co., div. 18 700
619, W. Allshouse, div. 19 1300
619, Anglun, Elliott & Co., div. 20 . . . rig
619, J. Markham, div. 21 100
619, Mills & Packard 400
619, B. I. Taylor 900
619, J. Grogan & Larkin 1000
619, J. B. Andrews 1500
619, F. M. Aiken, No. 1 . . . . . sand
619, " " 2 600
619, " " 3 800
619, Fertig & Henne, No. 1 1500
619, " " 2 600
619, " " 3 500
619, " " 4 800
619, " " 5 100
619, " " 6 . . . . . rig
619, M. Murphy, div. 5 . . . . . sand
619, " " 9 600
619, " " 10 500
619, " " 11 300
619, " " 4 . . . . . rig
619, Tack Bros., div. 3 1200
619, Zeigler & Smith, div. 1 . . . . rig bldg
619, " " 2 50
619, " " 13 800
619, " " 14 350
620, Weeks & Co. . . . . rig bldg
620, Phillips Bro's & Hoover . . . . rig bldg
620, Wilson & Co. . . . . rig bldg
620, Malone & Co. . . . . rig
620, C. K. Book & Co. 200
620, T. B. Simpson & Co. . . . . sand
620, J. R. Goldsborough 200
620, " 500
620, F. McDonald 300
620, Bell & Co. 500
620, S. G. Bayne . . . . . rig
620, B. F. Thornton 200
620, Carter & Hurd, No. 2 700
620, " " 3 . . . . . rig
620, J. Snow 1300
620, Book & Grace 100
621, Thompson, Filkins & Co. . . . . sand
634, S. Logan & Co. 500
634, W. Allshouse 500
634, J. R. Goldsborough & Co. 500
634, Wickham & Co. 600
634, Glycerine Oil Co. 300
634, Waugh & Co. . . . . rig
635, Anchor Oil Co., div. 2 . . . . . sand
635, Frank Wright, div. 6 . . . . . sand
635, M. C. Clark & Co., div. 15 400
635, Sam Crosby, div. 16 . . . . . sand
635, Janes & Johnson, div. 17 . . . . sand
635, Bowers & Chambers, div. 18 350
635, Murphy & Isherwood, div. 17 . . . 200
635, J. C. Lineman, div. 19 . . . . . sand
635, Carroll Bros. div. 19 . . . . . rig
635, Cedar Oil Co., No. 2, div. 21 . rig bldg
635, Thompson & Andrews, No. 2. div. 22 . . . . . rig bldg
635, Babcock, Thayer & Co., div. 24 . . rig
635, McCauley & Co., div 24 300
635, C. Miller, div. 28 . . . . . sand
635, " " 29 . . . . . rig
635, (R. & B.) How & Eaton, div. 2 . . . 200
635, " Reid & Brenneman, div. 3 rig
635, " Painter Bro's, div. 4 . . . 600
635, " Eaton & Howes, div. 5 . . sand
635, " Beaumont & Drake, div. 6 1500
635, " Capt. Tracy, div. 8 . . . 1000
635, " L. Merket, div. 9 300
636, div. 1, Hamshear & Husband . . . sand
636, " 1, " " 300
636, " 2, Northwestern Oil Co., No. 2 300
636, " 3, W. W. Ballerd 400
636, " 3, Woodcock & Co. . . . . rig bldg
636, " 4, Payne & Chambers . . . . rig
636, " 4, Cummings & Co. . . . . rig bldg
636, " 14, Bussell & Urquhart 100
636, " 14, Winger Bro's 200
636, " 12, Halleck Bro's & Johnson . . 800
636, " 12, H. R. Proctor 400
636, Stevenson & Co. 200
636, A. J. Gartland 300
636, Payne & Johnson . . . . . rig bldg

Lot 636, Frank Palmer 200
636, S. Comfort . . . . . rig bldg
636, Nickle Oil Co. 300
636, W. A. Rix & Co. 250
636, div. 19, J. T. Johnson . . . . . rig bldg
636, Roy & Henry 200
644, L. A. Brenneman 700
645, Rockland Oil Co. 1000
645, " " 200
645, McPherson & Co. 1500
645, Unknown . . . . . rig bldg
645, Johnson, Murphy & Co. 800
646, Union Oil Co., No. 4 . . . . . sand
646, div. 2, " 200
646, " 3, " 200
645, " 4, " . . . . . rig
646, " 9, " . . . . . rig
646, " 10, " . . . . . rig
646, " 12, " . . . . . rig
646, " 13, Kennedy Oil Co. . . . . rig
646, " 14, J. W. Humphrey . . . . . rig
646, " 16, Globe Oil Co. 50
646, " 17, Grace & Goldsborough . . . rig
646, " 18, J. O'Neil 300
646, " 19, Grace & Goldsborough . . . rig
646, " 20, Geo. Pease 100
646, " 21, Lynch & Snyder 50
646, Kennedy Oil Co., No. 1 800
646, " " 2 300
646, " " 3 100
646, " " 4 300
646, " " 5 . . . rig bldg
647, Anchor Oil Co., " 5 300
647, " " 7 . . . . . rig
647, " " 8 50
648, " " 9 . . . rig bldg
647, " " 10 . . . . . rig
647, " " 19 . . . rig bldg
647, " " 20 . . . . rig
647, " " 21 100
647, " " 22 . . . . . rig
647, " " 23 . . . rig bldg
647, " " 35 100
648, Rockwell & Co. . . . . rig
648, Chauncey Oil Co. . . . . rig
657, McKinney Oil Co., div. 1 1000
657, " " 3 500
657, " " 23 . . . rig bldg
657, Book & Arters . . . . . sand
657, " . . . . . rig
657, " . . . . . rig bldg
657, A. Sheidemantle 200
657, A. P. Tanner . . . . . rig bldg
657, Cooper & Giles 100
657, Kuhn & Co. 400
657, Lupher Bro's . . . . . 3 rigs bldg
658, Painter Bro's, div. 1 150
658, Time Oil Co., div. 2 100
658, K. H. McBride, div. 3 800
658, Johnson & Co., div. 4 500
658, " " 10 . . . . . rig
658, J. Markham, div. 11 100
658, S. P. Boyer, div. 12 . . . . . rig bldg
658, " " 13 . . . . . rig
658, " " 14 300
658, Vandergrift & Kelly, div. 15 800
658, S. P. Boyer, div. 16 600
658, " " 17 . . . . . rig bldg
658, W. Allshouse, div. 18 200
658, Halleck Bro's & Johnson, div. 19 . . 400
658, J. Briody & Co., div. 20 . . . . rig bldg
658, Fisher Bro's, div. 22 . . . . . rig
658, Allen & Soules, div. 23, fishing . . 300
658, Briody & Blair, div. 24 100
658, Knox & Lecky, div. 25 . . . . rig bldg
658, S. P. Boyer, " 26 100
658, Unknown " 28 900
658, McKeown & Co " 29 800
658, Stewart & Wickham, div. 30 . . . . rig
658, S. P. Boyer, " 31 1200
658, Knox & Lecky, " 32 400
658, Siggins & Burt, " 33 . . . . rig
658, J. Markham, " 34 . . rig bldg
658, R. Jennings, " 35 . . . . rig
659, J. Nelson . . . . . rig bldg
659, Barr, Pratt & Co. 200
659, W. H. Woods . . . . . rig
659, Geo. Given . . . . . rig bldg
659, Grace & Dimmick, shut down . . . sand
659, Unknown . . . . . rig
659, Wetmore & Murphy . . . . . rig
659, Johnson & Murphy 500
659, I. E. Dean . . . . . rig
660, Forest Oil Co. 1200
671, R. E. Green, No. 1 . . . . . rig
671, " " 2 . . . . . rig bldg
671, " " 3 . . . . . rig bldg
671, " " 8 . . . . . rig bldg
671, " " 9 . . . . . rig bldg
671, " " 16 . . . . . rig bldg
671, John McKeown . . . . . rig
672, W. Chambers, div. 1 . . . . . rig
672, Tim Mullen, Jr., No. 2, div. 2 . rig bldg
672, Booth & Co., " 3 . . . rig
672, Hoch & Ford. " 3 . . . rig
672, Galey Bros. 500
672, McDonald & Markham, div. 7 . . . sand
672, Barker & Townsend, " 8 . . . rig
672, " " " 9 . . . rig
672, J. R. Goldsborough, " 10 . . . rig
672, Greenlee & Anderson, " 12 . . . 400
672, Duke & Harris, " 13 . . . 1000
672, " " 14 . . . rig
672, Thornton Oil Co., " 15 . . . 800

Lot 672, Christy & Stafford, div. 16 . . . 200
672, " " " 17 . rig bldg
672, M. Feely, " 18 . . . rig
672, M. Mattison, " 21 . . . rig
672, Coast & Son, " 22 . . . 300
672, Coughlin & Roach, " 23 . . . rig
672, Frew & Co., div. 24 . . . . . rig
672, Beeman & Co., div. 25 . . . . . rig bldg
672, Hunter & Co., div. 26 . . . . . rig
672, J. H. Healy, div. 27 100
672, Harris & Wallace, div. 28 . . . . . rig
672, H. J. Morton & Co., div. 29 100
672, J. H. Caldwell, div. 30 . . . . . rig bldg
672, L. C. Stanford, div. 31 200
672, " " 32 . . . . . rig
672, McFadden & Co., div. 33 . . . . . rig
672, Drum & Duke, div. 34 . . . . . rig
672, Clark & Co., div. 35 . . . . . rig bldg
672, N. F. Clark, div. 36 . . . . . rig bldg
673, A. A. Richardson . . . . . rig bldg
681, N. F. Clark . . . . . rig bldg
681, O. F. Schonblom 200
683, McGrew Bros. 600

Drilling 163
Rigs 111

CLARENDON.

Lot 55, W. Beatty . . . . . rig
78, " . . . . . rig
78, " 300
78, " . . . . . rig bldg
79, Anchor Petroleum Co . . . . . sand
107, Malone & Co. . . . . rig
108, Grandin & Hague . . . . . rig
108, Duke & Harris . . . . . rig
161, Helm & Mealy Bros. 1000
498, Crowell & Estep. . . . . rig
498, Hopewell, Payne & Co. . . . . rig
498, F. Pratt & Co., No. 5 . . . . . rig
527, Tannery Oil Co., No. 5 . . . . . rig
528, Beaumont & Drake . . . . . rig
531, Lacy, Firman & Co 800
556, Bryan & Co., No. 6. . . . . rig

MISCELLANEOUS.

Limestone, lot 543, Marsh & Brum 700
Warrant 3,064, Pine Grove Oil Co. 100
Russelburg, Unknown . . . . . rig bldg
Elk Township, " . . . . . rig bldg

GLADE.

Roy, James Roy . . . . . rig

SHEFFIELD.

Lot 368, Magee & Horton . . . . . rig
408, Geo. Wetmore & Co . . . . . rig
212, Truby & Co. . . . . rig
Warrant 2,735, Clark & Co. 50
Henry's Mills, H. B. Porter, shut down . . .sand
Williamson, McKinney & Co., shut down . .sand

FOREST COUNTY.

Tract 5,218, Grove, Hart & Co. 600
Whig Hill, Hancock & Hicks . . . . . rig
Fox Farm Oil Co., Blue Jay Oil Co. . . . . rig
Balltown, May & Kelly . . . . . rig
Warrant 3,064, Unknown . . . . . rig bldg

Drilling 10
Rigs. 22

THE LOWER FIELD.

VENANGO.

O. W. S., Oil Well Supply Co. 200
————, Oil City Gas Co. 300

BYROM CENTRE.

Thos. Hays, John Sullin 800
Hazard Oil Co., Hopewell Tract 200
Adams & Story, J. E. Miller . . . . . rig
Daniels & Dougherty, H. C. Anderson . . .sand

CLARION.

Tomlinson, Tomlinson & Co. . . . . .sand
Payne, Tylersburg wildcat . . . . . shut down
Ritchy Run, Thos. Ritchy 300
Lyons, Pyper & Co. 800

BUTLER.

Bald Ridge, Bald Ridge Oil Co. . . . . rig
" " Sheidemantle . . . . . rig bldg
" " McBride . . . . . rig
" " Westerman . . . . . rig
" " Hoover and others . . . . . rig bldg

Drilling 9
Rigs. 6

MISCELLANEOUS.

Unknown, Phillips Bros. . . . . rig
Rochester, Unknown . . . . . rig
Westmoreland Co., Unknown . . . . . rig bldg

Rigs 9
Total drilling 9
" rigs . . . . . .

SUMMARY.

Wells Completed.

Section.	No. of Wells.	Barrels.	Average.	Dry.
East Branch, West Branch, Quintuple, Foster Brook	6	72	12	.
Kendall Creek, Oil Valley, Indian Creek, Big Shanty	13	179	13⅓	.
Cole Creek & Bingham, Kinzua	11	200	18	1
Totals	30	451	15	1

ALLEGANY FIELD.

Alma	9	100	11	.
Bolivar	53	1,055	20	.
Wirt	6	120	20	.
Genesee, Clarksville, Scio	13	213	16⅓	.
Totals	81	1,488	18⅓	.

WARREN.

Cherry Grove	56	17,590	314	2
Clarendon, Sheffield, Miscellaneous	12	78	6½	4
Totals	68	17,668	260	6

Grand Summary.

	Wells.	Prod'ct'n.	Average.	Dry.
Bradford	30	451	15	1
Allegany	81	1,488	18⅓	.
Warren	68	17,668	260	6
Lower Country	9	108	12	2
Grand totals	188	19,715	104¾	9

SUMMARY.

Drilling Wells.

Section.	Drill.	Rigs.	Total.
East Branch, West Branch	8	10	18
Quintuple	2	7	9
Kendall Creek, Foster Brook	1	17	18
Oil Valley, Indian Creek, Four Mile, Kinzua, Dew Drop	1	39	40
Cole Creek, Big Shanty	4	27	31
Totals	16	100	116

ALLEGANY.

Alma	7	21	28
Bolivar	20	51	71
Wirt	6	16	22
Genesee	7	25	32
Clarksville, Scio	4	9	13
Miscellaneous	1	1	2
Totals	45	123	168

WARREN.

Cherry Grove	163	111	274
Clarendon, Miscellaneous, Sheffield, Forest	10	22	32
Grand totals	173	133	306
Lower Country	9	9	16
Bradford	15	100	116
Allegany	45	123	168
	243	365	608

JULY OFFICIAL QUOTATIONS FOR CRUDE.

THE following table shows opening, highest, lowest, and closing quotations at the Oil Exchange each day.

	Opening.	Highest.	Lowest.	Closing.	Avg.
1	52¾	53⅛	52⅜	52½	52¾
3	Holiday.		Holiday.		
4	Holiday.		Holiday.		
5	52	52	50⅝	50¾	51¼
6	50⅜	50⅝	49⅛	49¼	49⅞
7	49½	52¾	49½	52¾	51⅛
8	53¾	59	53¾	55	56⅜
10	56⅝	58⅝	55¾	58¼	57⅛
11	60	60	56⅛	56⅜	58
15	56⅜	58	56	58	57
13	57⅞	57⅞	56½	57⅛	57⅛
14	56¾	58	56¾	58	57⅜
15	57¾	58⅞	57½	57½	58⅛
17	57½	57½	56¾	57	57⅛
18	57	58⅜	56⅞	57¾	57½
19	57⅝	58⅝	57⅜	58⅜	58
20	58⅝	58⅝	57½	57¾	58
21	57¾	58⅝	57¾	58⅝	57½
22	58¾	59¾	58¾	59¾	59¼
24	59½	62⅜	59½	62	60⅞
25	62⅜	63¼	61⅜	62⅜	62½
26	62⅜	62⅜	60⅞	60⅞	61⅝
Grand Average,					56.93

JULY OFFICIAL QUOTATIONS FOR REFINED.

THIS table gives the daily quotations for refined oil at the principal foreign as well as domestic ports.

June.	N. Y. cts.	Philadelphia. cts.	Baltimore. cts.	Antwerp. fr'c.	Bremen. m'rk.	London. pence.
1	7⅜	7⅜	7¼	17¾	6.85	5⅝
3	7⅜	7⅜	7¼	17¾	6.85	5⅝
4	7⅜	7⅜	7¼	17¾	6.85	5⅝
5	7	6¾	6¾	17¼	6.65	5⅜
6	7	7½	7	17¾	6.85	5⅝
7	7	6¾	6¾	17¼	6.65	5⅜
8	6⅞	6¾	6¾	17⅜	6.85	5⅜
10	7⅛	6¾	6¾	17½	6.75	5½
11	7⅛	6⅞	6⅞	17¾	6.85	5⅜
12	7⅛	7	7	17¾	7.05	5¼
13	7	6⅞	6⅞	17¾	7.05	5¼
14	7	6⅞	6⅞	17¾	7.05	5¼
15	6⅞	6½	6¾	17½	7.05	5½
17	6⅞	6¾	6¾	17¼	6.85	6⅜
18	6⅞	6¾	6¾	17¼	6.85	6⅜
19	6⅞	6¾	6¾	17¼	6.85	6⅜
20	6⅞	6⅝	6⅝	17¼	6.85	6⅜
21	6¾	6⅝	6⅝	17¼	6.85	6⅜
22	6⅞	6¾	6¾	17¼	6.85	6⅝
24	6⅞	6¾	6¾	17	6.85	5⅝
25	6⅞	6¾	6¾	17	6.85	5⅝
26	7	6⅞	6⅞	17	6.85	5⅝
27	6⅝	6⅞	6⅞	17	6.85	5⅝
28	6½	6⅜	6⅜	17¼	6.70	5⅝
29	6¾	6⅜	6⅜	17¼	6.70	5⅝
31	6¾	6⅜	6⅜	17¼	6.70	5⅝

PETROLEUM TESTER.

MINTIN Battle of Atlanta, Canada, has modified the British and American standard oil testers so that a perfect tester has been produced, something the world has never before been blessed with. The difficulty with all testers has been their changeableness. Seldom, if ever, were two persons known to obtain like results with the same instrument, the fault, of course, being in the person, not the machine. The principal of construction of the Battle tester appears to embrace all the good points of the Foster cup and the standard pyrometer adopted for use in Great Britain by act of Parliment in 1879. The principal improvements consist of a water thermometer, and air chamber, an escape to allow for oil expansion, and a new method of opening and closing the air valve, and the automatic extinguishment of the light when the danger point is reached, by the opening of the air valve.

MORE crude oil is being exported this year than usual, and it is not unlikely that in this particular the demand will continue to increase.

THE OIL WELL SUPPLY TRADE.

BUSINESS in this branch has been very dull during the past sixty days throughout the northern field and Allegany. This, of course, is owing to the partial suspension of drilling, upon which dealers always rely for activity. In the Warren field, however, a vastly different state of affairs exists. It has been almost impossible to supply the urgent demands of operators there for outfits. Dealers frequently had the pleasure during July of the presence of producers who "came to stay" with them from day to day awaiting the first load of fixtures that should arrive. Great difficulty and annoyance were encountered by the inability of the P. & E. R. R. to handle the freight that was offered it between Warren and Sheffield. Whether this was owing, however, to inability of the road, or a want of full appreciation of the situation by the manager or superintendent, is a matter to be decided in the mind of each person interested. It was a circumstance to cause some astonishment, as well as call forth commendations, that the narrow gauge between Bradford and Kinzua performed all that was asked of it without delay.

But the fact that there was a heavy demand in Cherry Grove for all kinds of well fixtures, that it was difficult to satisfy, remains as evidence of the remarkable activity that prevailed there during the first sixty days after the opening of 646. The simple item of lumber was increased in cost, delivered on the spot ready for use, nearly 100 per cent. Dealers in the article were compelled to raise the price from $1.00 to $3.00 per thousand, and teaming brought the entire cost to upwards of $20.00 a thousand, $10.00 being the price of the latter part of the work. Carpenter rigs which, prior to the excitement, were erected for $350 to $375, were made to cost $475. At the present time, however, there is a very different state of things. The demand for material has fallen off materially, and teams are in abundance at $7.00 per day, the usual price.

Tubing and casing remain firm at a slight advance over last month. The latter is now quoted at 70 cents, and the former at 20 cents per foot. Drive pipe, the same as formerly, $2. 5 per foot. Small pipe schedules as follows: 1½-inch pipe, 18 cents; 1¼-inch pipe, 16 cents; 1-inch pipe, 10 cents; ¾-inch pipe, 8 cents. Belting: 3-ply, 40 cents; 4-ply, 45 cents, and 5-ply, 52 cents. Cordage is higher, owing to a large demand for manilla, which is said to be largely used in the West for binding grain.

It is very probable that prices of general hardware are to remain firm, and, possibly, may go a little higher. The following from a recent letter from Birmingham, England, indicates something:

"HARDWARE IN BIRMINGHAM—THE QUESTION OF "PRICES.

"Prices, though still very low, are strengthening with the metal market, and are now in that sensitive state which needs only a slight expansion of demand to cause a general upward movement. Certain of the nut and bolt makers, for example, have this week issued circulars announcing the withdrawal of their trade price lists, accompanied with the intimation that they will shortly be issuing new lists, and that in the meantime all orders will be subject to the new list or to special quotations. The home trade, though quiet, is more cheerful in tone than it was a month ago. Most of the Central and South American markets are buying steadily, and the United States and Canada also continue satisfactory customers for the various classes of hardwares."

THE CHESTER OIL COMPANY.

THE splendid water facilities, where they are situated at Thurlow, offer the best arrangements for shipping petroleum from tidewater in this country.

When the Chester Oil Company selected Thurlow as the site of its projected refinery, it founded what promises to become one of the most active centres of the petroleum refining industry on the seaboard. Thurlow is sixteen miles below Philadelphia. The splendid water-front and docking facilities afforded by the deep water of the Delaware, which rendered Chester so excellent a locality for a ship-yard, renders Thurlow equally desirable for the location of oil refineries working for the export trade. The Tidewater Pipe Line has its terminal station here, with tankage for about 25,000 barrels of crude petroleum. These works are so closely allied to the Tidewater Pipe Line as to be, in fact, a part of what is known as the Tidewater system, completed there in 1881, and may be fairly called a model refinery. This refinery and the accessories were planned by Mr. J. E. Morse, the manager of the company, and Mr. F. W. Edwards, Superintendent, and were erected under their supervision. The works are destined to have a large business and doubtless to be a very successful enterprise in a financial point of view. The oil manufactured is among the finest and purest to be obtained in the world and meets with ready sale.

STATEMENT made by the United Pipe Lines July 10th, 1880, and enlarged to July 31st, 1882. It gives gross stocks, sediment and surplus, net stocks, outstanding balances, receipts (or runs) from all sources, and total deliveries:

	Gross Stocks.	Sediment and Surplus.	Net Stocks.	Outstanding Acceptances.	Credit Balances.	Receipts from all Sources.	Total Deliveries.
1877—April	1,895,153.71	77,386.70	1,817,767.01	449,640.14	1,368,126.87	200,570.81	125,797.90
May	1,762,602.64	75,363.87	1,687,237.77	663,663.71	1,003,574.06	493,200.58	619,612.26
June	1,596,367.68	81,255.42	1,488,112.26	661,786.57	826,325.69	538,906.95	737,609.77
July	1,482,433.51	81,741.50	1,400,692.01	667,166.36	733,625.65	615,145.46	699,476.18
August	1,489,052.53	81,144.63	1,407,907.90	643,281.46	764,626.44	673,403.04	666,144.28
September	1,339,032.27	67,163.68	1,271,868.59	552,676.26	719,192.33	625,225.37	769,745.57
October	1,434,728.78	46,771.99	1,387,956.79	673,850.05	714,106.74	687,094.59	570,092.71
November	1,691,399.52	39,418.00	1,651,981.52	657,591.36	994,390.16	913,644.19	649,242.70
December	2,830,413.36	68,729.63	2,761,685.73	754,338.25	2,007,347.48	1,656,150.37	506,332.99
1878—January	3,124,641.15	72,453.43	3,052,187.72	864,711.41	2,187,476.31	872,681.18	715,149.78
February	3,439,526.98	82,452.66	3,357,074.32	1,404,292.13	1,952,782.19	1,030,688.44	720,478.14
March	3,940,000.65	92,963.06	3,847,037.59	1,487,430.50	2,359,598.09	1,196,251.26	701,681.27
April	4,335,274.84	133,935.76	4,201,340.08	1,615,791.19	2,585,548.89	1,137,359.40	778,050.53
May	4,609,681.45	150,117.76	4,459,563.69	2,065,333.31	2,394,230.38	1,104,352.40	843,081.33
June	4,719,699.25	181,800.03	4,537,899.22	1,950,420.81	2,587,478.41	1,092,604.02	1,004,474.55
July	4,885,851.72	229,080.78	4,656,770.94	2,078,466.56	2,578,301.38	1,258,648.45	1,108,074.33
August	4,571,658.59	217,085.19	4,354,573.40	2,064,590.75	2,289,982.64	1,195,268.67	1,496,009.04
September	4,410,061.84	225,088.86	4,184,972.88	2,705,853.95	2,479,119.03	1,182,118.57	1,318,265.33
October	4,072,267.43	234,050.89	3,838,576.54	1,517,484.27	2,321,092.27	1,271,174.73	1,564,984.43
November	4,083,972.42	216,655.30	3,867,317.12	1,784,443.35	2,082,873.77	1,159,623.71	1,129,047.42
December	4,098,200.92	201,470.30	3,896,730.62	1,741,311.07	2,155,419.55	972,338.83	924,035.93
1879—January	4,759,031.41	182,707.80	4,576,323.61	2,153,763.83	2,422,559.78	1,231,237.19	546,271.74
February	5,157,646.15	171,689.80	4,985,956.35	2,346,238.22	2,639,718.13	1,055,377.95	643,828.71
March	5,503,768.71	190,797.91	5,312,970.80	2,484,861.83	2,828,088.87	1,363,512.17	1,029,029.70
April	5,885,675.24	211,957.06	5,673,718.18	2,644,301.36	3,029,416.82	1,379,349.76	1,015,482.04
May	6,180,843.53	315,992.98	5,864,850.55	2,522,846.36	3,342,364.19	1,488,514.31	2,228,043.27
June	6,426,802.45	334,457.29	6,992,345.16	2,959,921.12	3,132,424.04	1,437,250.90	1,204,557.54
July	6,419,699.08	323,295.32	6,096,403.76	2,323,575.29	2,772,828.47	1,472,651.01	1,465,518.05
August	6,380,606.63	300,345.15	6,078,261.48	3,581,224.03	2,497,037.45	1,714.620.11	1,728,940.81
September	6,589,859.83	325,363.85	6,264,995.98	3,783,480.38	2,481,015.60	1,691,863.41	1,455,811.45
October	6,701,209.87	299,393.67	6,401,816.20	3,788,155.65	2,613,660.55	1,646,725.06	1,502,991.20
November	6,951,133.67	303,641.17	6,647,492.50	3,927,300.18	2,675,192.32	1,600,961.29	1,328,621.19
December	7,362,409.76	294,571.37	7,067,838.39	4,235.459.40	2,832,378.99	1,771,781.24	1,331,822.12
1880—January	7,735,257.38	295,517.60	7,439,739.78	4,436,788.55	3,002,951.25	1,832,963.04	1,145,194.98
February	8,187,012.49	322,568.93	7,864,443.56	4,602,286.49	3,262,157.07	1,607,663.89	1,178,111.92
March	8,621,097.49	351,130.35	8,969,967.14	4,811,894.33	3,458,072.81	1,815,133.31	1,396,037.88
April	9,662,354.59	388,558.16	9,273,766.43	5,846,536.60	3,427,259.83	1,739,297.37	723,794.73
May	10,306,078.79	454,193.73	9,851,885.06	6,361,320.05	3,490,565.01	1,552,240.91	975,061.26
June	11,266,771.77	477,431.60	10,789,340.08	7,397,131.89	3,392,208.19	1,781,937.29	848,339.08
July	12,039,010.00	475,446.56	11,563,563.44	8,125,241.25	3,438,332.19	1,890,161.44	1,095,528.25
August	12,749,623.28	462,987.28	12,286,636.00	8,635,394.80	4,651,241.20	1,904,452.70	1,177,448.42
September	13,618,276.03	382,398.71	13,236,327.32	9,287,193.94	3,949,133.38	2,075,105.26	1,115,184.71
October	14,020,877.32	391,331.55	13,629,545.84	9,448,615.77	4,180,930.07	1,999,487.98	1,598,285.06
November	14,656,891.55	341,262.67	14,315,628.88	10,038,824.08	4,231,804.80	1,859,991.50	1,064,146.39
December	15,369,758.67	361,184.83	15,008,573.48	10,913,283.49	4,095,290.35	1,987,283.54	1,207,928.35
1881—January	16,291,307.87	360,688.98	15,930,618.89	11,672,583.61	4,258,035.28	1,876,526.50	931,818.71
February	17,355,485.31	391,616.47	16,936,868.84	12,029,594.35	4,934,274.49	1,823,713.46	781,745.93
March	18,488,476.94	432,304.19	18,056,172.75	13,099,262.44	4,956,910.31	2,222,812.39	1,116,695.11
April	19,560,752.23	517,422.38	19,043,329.85	13,846,285.20	5,197,044.65	2,182,636.96	1,183,779.02
May	20,591,177.33	640,662.03	19,950,455.30	14,608,124.70	5,342,330.60	2,278,582.78	1,356,688.23
June	21,397,698.53	756,412.85	20,641,285.68	14,738,828.77	5,902,456.91	2,318,445.18	1,545,448.13
July	21,982,161.42	774,402.94	21,207,758.48	15,150,267.23	6,057,131.25	2,396,472.50	1,756,044.15
August	22,474,105.51	800,343.43	21,673,762.18	15,240,553.15	6,433,209.03	2,527,888.69	2,013,844.67
September	22,727,740.61	820,434.43	21,907,306.18	15,626,283.11	6,281,023.07	2,233,085.37	1,900,251.83
October	23,212,951.99	801,243.43	22,431,708.56	16,408,030.46	6,023,678.10	2,452,428.66	1,803,052.62
November	23,303,782.34	746,980.08	22,556,744.26	16,407,354.48	6,149,389.78	1,995,895.38	1,742,462.86
December	23,862,966.20	775,000.00	23,087,966.20	16.496,380.40	6,234,291.37	2,255,252.50	1,696,068.64
1882—January	24,243,382.26	762,111.53	23,481,270.73	17,788,245.97	5,693,024.76	1,984,325.23	1,547,945.23
February	24,704,933.81	765,000.00	23,939,933.81	18,541,340.52	5,831,402.36	2,062,742.98	1,601,191.43
March	25,663,298.81	887,210.88	24,776,087.93	19,039,760.73	5,736,327.20	2,305,538.30	1,453,354.46
April	26,519,252.22	993,150.92	25,526,101.30	19,963,183.00	5,562,918.30	2,145,965.63	1,381,093.10
May	27,518,619.53	1161,789.36	26,356,830.17	20,622,520.38	5,734,309.79	2,339,170.39	1,496,566.23
June	28,311,328.53	1344,852.60	26,966,475.93	21,282,495.62	5,683,980.31	2,419,934.81	1,796,712.55
July	28,955,781.79	1330,493.28	27,625,288.51	22,037,273.31	5,588,015.20	2,599,606.49	1,982,695.57

THE United Pipe Line has now at work forcing oil at Vandergrift City, Cherry Grove, the largest steam pump in the Oil Regions. It weighs 85 tons, and has a capacity of 2,000 barrels an hour. It has silenced the other small fry throughout the field.

ABOUT 9,000 barrels of oil, one-tenth of a day's production, went up in smoke by the burning of M. Murphy's No. 1 well, on lot 619, Cherry Grove, Saturday, the 12th inst., together with one well belonging to James Snow of the United Pipe Line.

SHIPMENTS.

Shipment of Crude and Refined, in Barrels of 42 Gallons each, reduced to Crude Equivalent out of the Producing Regions in the years named:

Year.	January.	February.	March.	April.	May.	June.	July.	August.	September.	October.	November.	December.	Totals.
1859	. . . . .	. . . . .	. . . . .	. . . . .	. . . . .	. . . . .	. . . . .	. . . . .	. . . . .	. . . . .	500	1,200	1,700
1860	900	1,200	2,500	4,640	11,000	21,000	58,500	64,300	79,000	78,400	63,400	38,400	423,240
1861	54,800	49,620	68,410	95,300	184,000	189,000	200,400	210,000	263,000	184,000	76,321	75,282	1,650,133
1862	98,212	93,101	103,762	201,430	256,320	385,211	375,440	376,311	401,210	406,500	213,611	190,463	3,141,521
1863	171,132	104,928	148,388	288,994	456,211	428,282	213,413	281,400	398,211	264,441	281,340	206,211	3,242,951
1864	148,324	101,431	96,486	132,486	125,218	221,386	110,490	101,218	228,430	220,386	201,441	154,765	1,842,001
1865	121,386	94,803	103,201	122,222	140,301	338,403	184,231	115,821	231,402	228,321	215,262	204,779	2,100,132
1866	132,200	121,320	180,206	260,231	280,320	390,260	200,410	290,210	390,431	318,616	210,016	236,701	3,010,921
1867	123,460	115,321	165,230	250,830	300,210	360,311	210,410	260,310	384,206	300,102	280,013	132,807	2,883,210
1868	150,220	144,201	200,410	280,430	310,408	400,046	390,402	320,210	480,306	260,240	280,260	265,377	3,482,510
1869	200,026	160,320	240,210	260,406	340,318	400,601	310,260	250,214	450,200	480,860	280,210	249,896	3,623,521
1870	360,933	312,910	354,400	390,003	407,908	418,516	410,707	516,679	542,217	557,624	519,780	444,254	5,235,931
1871	437,691	347,718	383,890	389,147	587,375	501,754	541,137	528,134	551,075	505,071	480,977	410,822	5,664,791
1872	476,966	407,606	276,220	428,512	510,417	529,228	591,238	621,954	541,607	607,468	477,940	430,786	5,899,942
1873	573,124	527,440	668,374	708,191	768,176	696,414	814,449	864,768	952,955	1,010,852	959,589	955,443	9,499,775
1874	843,663	501,220	518,246	803,409	899,027	815,413	940,281	793,865	1,014,570	543,341	546,117	602,348	8,821,500
1875	435,095	327,776	693,918	729,581	681,679	745,986	904,537	882,089	1,109,392	871,917	671,066	871,902	8,924,938
1876	677,289	519,193	623,762	603,037	646,150	921,862	1,228,530	1,203,402	1,154,549	524,190	871,496	1,190,983	10,164,443
1877	743,461	484,904	913,919	903,526	1,234,324	1,391,124	1,096,951	1,425,943	1,563,797	1,268,971	1,205,634	600,019	12,832,578
1878	775,791	774,234	741,512	846,636	960,894	1,135,119	1,330,454	1,655,651	1,434,225	1,747,390	1,281,410	992,688	13,476,000
1879	663,998	702,729	973,879	1,136,188	1,331,469	1,369,314	1,625,035	1,808,238	1,627,120	1,662,269	1,453,645	1,542,585	15,896,469
1880	1,650,409	1,395,151	1,613,371	842,268	1,095,259	975,083	1,231,611	1,304,129	1,252,635	1,665,933	1,226,030	1,335,613	15,587,447
1881	1,061,617	915,028	1,276,740	1,348,398	1,563,436	1,729,697	1,925,532	2,214,877	2,031,950	2,080,467	2,069,641	2,014,655	20,232,038
1882	1,817,973	1,829,779	1,729,237	1,751,294	1,843,455	2,261,172	2,239,591	. . . . .	. . . . .	. . . . .	. . . . .	. . . . .	. . . . .
. . . . .	. . . . .	. . . . .	. . . . .	. . . . .	. . . . .	. . . . .	. . . . .	. . . . .	. . . . .	. . . . .	. . . . .	. . . . .	. . . . .

ASTOUNDED FREIGHT HANDLERS.

A CIRCUMSTANCE having a sad feature, at least on one side, transpired during the latter part of July, at Sheffield, Pa. It is well known to those having freight to handle along the line of this road, from Corry to Kane, that great difficulty had been encountered in having cars side-tracked so that they could be unloaded The blockade became so great and so general, that the managers could hear it all the way to Williamsport and Harrisburg, or wherever they reposed. Finally, some presumptuous operator ventured a letter of explanation of the troubles to the superintendent of the Western Division. Whatever was related in this letter there was no time lost by the superintendent in appearing on the scene. Sheffield seemed to be the most troublesome point, and there Mr. Superintendent swooped down on the employés like an eagle on a hen's nest. He was a stranger to everybody in the town and country. He had a carload of material he desired transferred from the track where it stood to a convenient point for re-shipment by teams. The agent at the station was approached on the subject, who referred him to the man in charge of the switch-engine and the yard generally. This chap was very offish and difficult to manage in the matter. Finally, after an unsuccessful siege of adoration and supplication, Mr. Superintendent offers his employé $25 if he will set that car in position immediately. This it is needless to state had the desired affect. The car was planted, when Mr. Superintendent made his awful presence known to the astounded employés. There was not only trembling and shaking of the knees and gnashing of teeth, but there were several railroad boys looking for a job in ten minutes thereafter. So it was more on account of the unwillingness of shippers to shove out *backsheesh* than inability on the part of the railroad to perform the necessary work in the moving of freight.

TABLE SHOWING TOTAL PRODUCTION OF CRUDE PETROLEUM IN PENNSYLVANIA AND NEW-YORK OIL FIELDS, AND CONSUMPTION.

From 1859 to 1881, Inclusive.

Year.	Oil Creek Division. Bbls.	Pithole District Bbls.	Tid'ute and Fa-gundas District Bbls.	Central All'g'ny Divis'n. Bbls.	Butler, Armstr'g & Lower Allegany Bbls.	Clarion Division Bbls.	Bradford Division Bbls.	Bullion District Bbls.	Warr'n Div. Bbls.	Beaver Div. Bbls.	Alleg. Co., N. Y., Div. Bbls.	Yearly Total. All Districts. Bbls.	Con-sumption. Bbls.	Yearly Aver-age Price.
1859	2000	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	2000	500	20.00
1860	500000	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	500000	300500	9.60
1861	2113609	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	2113609	1280000	.49
1862	3056690	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	3056690	1472000	1.05
1863	2611309	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	2611309	1992800	3.15
1864	2216109	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	216109	1946620	9.87½
1865	1585200	912500	20500	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	2518200	2238610	6.59
1866	2302700	1095000	490000	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	3887700	2574401	3.74
1867	2393300	814000	839900	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	4047200	2960561	.41
1868	2672617	445500	729000	26000	. . .	. . .	. . .	. . .	. . .	. . .	. . .	3873117	3404645	3.62½
1869	3462500	365000	535000	22500	45000	. . .	. . .	. . .	. . .	. . .	. . .	4430000	3716341	5.63¾
1870	2745528	173585	723838	713150	918644	. . .	. . .	. . .	. . .	. . .	. . .	5274745	4562642	3.89
1871	2040263	182054	697887	1083386	1091458	310293	. . .	. . .	. . .	. . .	. . .	5405341	5178038	4.34
1872	1429685	145065	847199	881140	2658080	829079	. . .	. . .	. . .	. . .	. . .	6790248	5954742	3.64
1873	1094389	119864	895983	851934	4402563	2526231	. . .	. . .	. . .	. . .	. . .	9890964	7847953	1.83
1874	734247	55770	373325	564978	5160265	3921267	. . .	. . .	. . .	. . .	. . .	10809852	7875145	1.17
1875	504639	35130	351407	343905	4712702	2821214	18509	. . .	. . .	. . .	. . .	8787506	9256416	1.35
1876	611884	37450	354284	333640	4755623	2377700	382768	64220	51337	. . .	. . .	8968906	10414877	2.56¼
1877	734858	60380	312700	474262	5431072	3021120	1465451	1306342	151371	62085	. . .	13019641	11977107	2.42
1878	686948	60000	308780	363710	4552815	2276408	6482400	505265	108300	92490	. . .	15437116	13783672	1.19
1879	389400	36500	227900	258652	2876787	1438342	14268945	289591	45550	82100	. . .	19913767	16851222	.85⅞
1880	335342	36500	168542	166143	1737969	868984	22343202	146672	91655	102956	. . .	25997965	18228905	.94½
1881	293504	31938	146474	145374	1394706	844442	22817975	128338	438000	102956	607106	26950813	21263740	.85¾
	34516721	4706236	7022719	6228774	38737684	21235080	67779250	2440428	886213	442587	607106	186502798	155081437	3.92¼

RECAPITULATION.

Production by Fields.—1859 to 1881, Inclusive.

Oil Creek Division, including Shamburg, Pleasantville and Enterprise,	34,516,721	Clarion County,	21,235,080
Pithole Division, including Henderson, Morey and Ball Farms,	4,706,236	Bradford Division, including Elk County,	67,779,250
Central Allegany, including Scrubgrass and West Hickory,	6,228,774	Bullion Field,	2,440,428
Butler and Armstrong Counties, Lower Allegany Division,	38,737,684	Warren, Stoneham and Clarendon,	886,213
Tideoute Division, including Economite, Henderson, Farms, etc.,	7,022,719	Beaver (Smith's Ferry) Division,	442,587
		Allegany Division,	607,106
		Total all Divisions, Production,	186,502,798
		Total Consumption,	155,181,437
		Difference,	31,421,361

This difference includes, of course, all available stocks on hand, all sediment and worthless surplus, and the amount estimated for shrinkage, which would reduce the available stocks to the figure given elsewhere.

This table is made to show the amount of oil saved and used. It differs but little with the first production table published in the AGE, and was compiled by a producer who possesses valuable records

Area of Developed Territory.

Venango County, Pa	25,600 acres.	Clarion County, Pa.	19,200 acres.
Crawford County, Pa.	6,400 "	Butler County, Pa.	28,000 "
Forest County, Pa.	2,920 "	McKean and Cattaraugus	63,800 "
Warren County, Pa.	11,000 "	Allegany	18,360 "
Armstrong County, Pa.	5,120 "		
Total			180,400 acres.

This covers all territory productive, whether light or small, as yet discovered in the States of Pennsylvania and New-York.

THE OIL TRADE OF CALIFORNIA.

WE clip the following from the San Francisco *Journal of Commerce:* "The following figures show in a very striking manner the changes that are being wrought out in the oil trade of California:

	1882.	1881.
California Oil, 6 months' receipts	1,502,380	1,091,760
Imports Eastern Oil do	168,860	379,900

"At Sacramento there were imported in large lots of a carload at a time, 17 cars and 2,037 cs. or 76,870 gallons, about one-half of the receipt in this city. Here, while the receipts of Eastern have fallen off about one-half, there has been an increase of nearly 50 per cent. in the receipts of California. We shall soon have to seek outlets for our productions, and will doubtless find them in Mexico, British Columbia, China and Japan. The improved methods of refining introduced here enabled those interested to make a good marketable oil."

EXPORTS OF PETROLEUM—JUNE, 1882.

The following has been received from Joseph Nimmo, Jr., chief of the Bureau of Statistics, Washington, D. C.

Sir,—I have the honor to submit to you the following statement, showing the exports of Petroleum and Petroleum Products from the principal and all other customs districts of the United States, during the month of June, 1882, and during the twelve (12) months ended the same, as compared with similar exports during the corresponding periods of the preceding year:

CUSTOMS DISTRICTS.	CRUDE.	NAPTHAS.	ILLUMINATING.	LUBRICATING.	RESIDUUM.	TOTAL.
	GALLONS.	GALLONS.	GALLONS.	GALLONS.	GALLONS.	GALLONS.
Boston,		500	374,291	12,140		386,931
New-York,	2,632,495	1,408,576	34,026,108	555,458	160,482	38,783,119
Philadelphia,	171,084	114,554	12,714,469	133,600		13,133,707
Baltimore,			1,464,200	3,449		1,467,649
San Francisco,		220	40,150	162		40,532
All other districts,	131,411	4,093	101,239	17,613		254,356
Total for June, 1882,	2,934,990	1,527,943	48,720,457	722,422	160,482	54,066,294
Total for June, 1881,	3,796,551	2,219,342	55,202,432	370,738	377,538	61,966,601
Total for twelve months ended June 30, 1882,	41,304,997	20,213,098	488,213,033	6,508,100	3,715,362	559,954,590
Total for twelve months ended June 30, 1881,	39,984,844	17,292,310	332,283,045	4,852,203	3,247,860	397,660,262
Total value of the product exported June 30, 1882,						$51,232,706
Total value of the product exported June 30, 1881,						$40,315,609

RUNS, DELIVERIES, STOCKS.

TABLE showing the June and July Pipe Line Runs and shipments, with stocks, on July 31st, 1882—official.

DISTRICT.	RECEIPTS, Pipe.	BARRELS, June.	BARRELS, July.
Bradford	United		
Tidioute & Titus'e,	"		
Lower Country	"		
Monongahela	"		
Total	"	2,419,934.81	2,599,606.49
Bradford	Tidewater	265,911.16	262,399.60
Warren	Union Oil Co.	63,466.54	77,364.26
Titusville	Octave Oil Co.	4,473.62	4,394.71
Oil City	Charley Run	000,750.00	372.98
Shaffer	Shaffer Run	000,452.80	560.00
Franklin	Franklin Pipe	6,917.76	6,257.55
Total all Lines		2,865,686.51	2,950,955.59
Average per day for July			95,192.11
Average per day June			95,522,95
Average per day May			85,563.70
Average per day April			80,093.98
Average per day March			83,724.96
Average per day February			83,547.40
Average per day January			71,855.35

Deliveries.

DISTRICT.	PIPE.	BARRELS.	BARRELS.
All Points	United	1,796,712.55	1,982,695.71
Warren	Union Oil Co.	047,454.03	41,010.46
Titusville	Octave Pet. Co.	004,038,70	3,699.40
Franklin	Franklin Pipe	003,749.85	2,865.72
Shaffer	Shaffer Run	000,523.93	351.60
Oil City	Charley Run	000,544.72	303.67
Bradford	Tidewater	247,250.84	173,553.43
Total deliveries		2,215,685.93	2,204,479.99
Am't of Runs in excess of Shipm'ts,			746,475.60

DISTRICT.	PIPE.	*Net Stocks June 30.* BARRELS.	*Net Stocks July 31.* BARRELS.
Oil City	Charley Run	003,625.00	3,692.46
Bradford	Tidewater	2,307,014.14	2,271,419.78
All Districts	United	26,966,475.93	27,625,288.51
Shaffer	Shaffer Run	026,250.72	26,545.53
Warren	Union Oil Co.	165,840.67	199,829.42
Titusville	Octave Oil Co	10,151.98	10,701.43
Franklin	Franklin Pipe	16,152.24	19,544.07
Total July			30,157,021.20
Total June			29,540,517.47
Total May			28,833,715.51
Total April			27,969,884.48
Total March			27,252,806.93
Total February			26,414,274.36
Total January			25,788,071.79
Increase July			616.503.73
Increase June			706,801.96
Increase May			863,631.03
Increase April			717,077.55
Increase March			838,532.57
Average increase per day, July			19,887.21
Average increase per day, June			23,560.15
Average increase per day, May			27,859.06
Average increase per day, April			23,902.58
Average increase per day, March			27,049.44
Average increase per day, February			22,364.00
Average increase per day, January			12,174.73

THE McCalmont Oil Co., or Storage Co., is now prepared to handle 10,000 barrels of oil a day in Cherry Grove. The Company ships by P. & E., D. A. & V. and B. & P. Railroads.

PRODUCTION TABLE.

SHOWING THE TOTAL DAILY NET YIELD OF THE PENNSYLVANIA OIL FIELD FROM SEPTEMBER, 1859, TO JULY 31ST, 1882, IN BARRELS OF 42 GALLONS EACH.

Years.	Jan.	Feb.	Mar.	April.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.	Totals.
1859	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	10	15	18	28	2,173
1860	30	50	89	215	500	1,000	2,000	2,500	3,000	3,500	2,000	3,000	547,439
1861	3,201	4,041	4,800	5,400	6,000	6,100	7,100	8,500	7,000	5,150	5,514	6,716	2,119,045
1862	6,000	5,300	7,400	8,000	9,400	9,000	8,500	11,000	13,000	10,565	8,053	7,238	3,153,183
1863	6,200	6,400	7,000	5,500	6,000	7,603	7,022	8,100	9,200	7,120	9,500	10,260	2,667,543
1864	8,100	6,300	4,500	5,000	7,000	5,100	5,600	5,700	7,180	5,545	10,100	10,320	2,215,150
1865	5,900	5,800	5,000	7,500	8,000	8,000	7,400	6,350	6,400	6,800	7,600	9,350	2,560,200
1866	9,200	9,100	5,000	7,100	8,100	9,500	9,350	9,440	12,000	10,400	11,000	11,165	3,385,105
1867	10,900	8,100	9,000	10,100	10,500	9,000	10,100	10,000	10,100	7,660	9,155	8,313	3,458,113
1868	8,200	9,400	8,100	9,300	11,000	12,400	13,000	11,800	10,250	8,225	7,580	7,150	3,540,670
1869	8,100	8,500	10,000	11,000	13,000	13,000	13,560	13,000	13,500	12,500	11,200	10,625	4,186,475
1870	11,348	11,802	11,509	12,400	15,990	13,400	13,800	15,950	18,203	18,000	17,061	15,990	5,308,046
1871	13,500	13,300	13,082	12,950	13,054	13,882	14,900	15,866	15,555	15,889	15,599	15,841	5,278,072
1872	17,943	17,894	15,680	16,221	17,402	12,140	16,933	17,440	16,598	18,450	25,942	20,630	6,505,774
1873	20,550	21,460	21,830	22,260	24,632	26,361	23,406	30,900	32,500	31,343	33,584	34,680	9,849,508
1874	32,800	30,940	29,760	28,104	29,442	31,222	33,987	32,000	29,461	29,944	29,231	28,101	11,102,114
1875	27,900	26,509	26,012	23,009	23,000	23,805	24,991	23,940	23,800	23,900	23,821	23,594	8,948,749
1876	23,102	25,440	23,560	23,800	24,628	24,400	24,890	25,300	25,900	26,400	26,500	25,900	9,142,940
1877	26,930	27,560	28,860	32,060	36,000	37,440	39,210	42,100	41,321	41,200	39,900	40,120	13,230,330
1878	39,200	39,900	39,200	40,100	41,111	40,820	41,200	42,900	43,999	44,480	45,200	43,900	15,272,491
1879	44,000	43,830	47,960	50,810	52,911	55,600	56,911	59,940	61,498	60,980	58,750	58,231	19,835,903
1880	59,982	63,890	66,215	68,063	72,080	73,104	73,794	74,980	71,941	77,491	76,112	74,080	26,086,692
1881	73,030	69,060	73,900	75,245	79,000	82,460	81,900	79,100	78,231	77,971	77,892	76,642	28,136,353
1882	75,028	74,910	74,751	76,690	78,601	80,469	90,020	. . .	. . .	. . .	. . .	. . .	. . .

Total twenty-three years to December 31st, 1881, ... 186,532,067

WELLS COMPLETED.

TOTAL NUMBER WELLS COMPLETED EACH MONTH IN THE YEARS AND MONTHS NAMED.

A. D.	Jan.	Feb.	March.	April.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.	Total.
1870	131	131	114	135	164	182	161	156	135	144	112	79	1,644
1871	98	68	70	81	95	150	139	116	125	186	161	181	1,470
1872	48	118	98	122	130	98	131	117	96	101	41	101	1,201
1873	100	105	105	110	106	180	112	116	116	111	108	95	1,364
1874	108	111	108	110	112	113	124	102	108	117	112	116	1,341
1875	184	186	194	180	169	194	208	206	208	215	213	228	2,385
1876	235	236	248	207	200	258	243	274	223	270	278	271	2,943
1877	275	249	296	264	336	598	314	254	332	460	398	391	4,167
1878	279	238	202	411	468	278	210	180	176	232	241	160	3,075
1879	144	136	221	263	395	336	335	280	269	229	225	268	3,101
1880	311	238	358	494	435	315	339	359	359	360	334	309	4,211
1881	232	218	201	310	412	371	348	335	314	302	347	405	3,795
1882	357	359	389	449	457	328	188	. . .	. . .	. . .	. . .	. . .	. . .

THE NEW "AGE" MAP.

THE map on the last page will be found to be the most comprehensive ever published in the Oil Regions. It shows at a glance all there is of the oil country, together with every important railroad centre and every oil development, great and small, which is represented by the red spot. The relative position of each is shown, and an idea of the outline of what are termed "surface indications." While this does not mean very much, yet it indicates to a degree the possible line of oil rock, and the distance the wildcatter may go from the centre with some show of obtaining reward for his outlay. It will be seen that Warren and Forest counties embrace a greater area of undrilled territory than many others. While the McKean pool was the largest and most important as to yield ever developed, yet the surface formation, which resembles that which contains oil beneath, is confined to narrower limits. This map may be of interest to the trade in all the world, as any new spot that may hereafter be developed may be located exact, and its comparative worth properly estimated. Doubtless the attempt to thus satisfy a want in the map direction will be appreciated.

The engraving, as indicated, was performed by Matthews, Northrup & Co., of Buffalo, and is about as fine as it could be done.

OLD wells in the Allegany field are usually found to be producing 40 per cent. less oil, when gauged, than producers report them.

THE OIL SITUATION.

THE changes worthy of special mention are first, the increase of Cherry Grove's daily yield; the new development of Forest County; the gradual decline of the Allegany and Bradford districts, and the strikes at Bald Ridge, Butler County. As to the first proposition, it is quite difficult to give to the trade a statement that can be taken as unquestionable. It is true the wells first sunk in Cherry Grove have declined in yield to very moderate dimensions, nor are they alone on this schedule. Many of those recently completed, and which started off at a 2,000 barrel rate or more, so speedily declined as to cause apprehension on the part of owners of rapid exhaustion of supply. In some cases the wells stopped flowing altogether, and this led to the search for the cause. It was found that the wells were remarkably productive of paraffine, and, to obviate the difficulty, benzine was, in a few instances, poured into the wells. This was found to be ineffective, and glycerine was resorted to. Contrary to the expectation and assertions of those who pretended to have light on the subject, the latter agent proved to be the proper antidote for all the ills of these failing producers. In nearly all instances the wells, by a very moderate use of the explosive, resumed their former greatness, and maintained it the usual length of time — from one to five days, declining each day, of course, as at the beginning. The process was pursued by one and another until it became universal, and a few were unwilling to wait for even one day's yield without forcing the production by a torpedo. For this reason the production of the old wells has been maintained far beyond the anticipations of the trade which viewed the rapid decline, at first reported, in a light quite favorable to better prices. All attempts to obtain a gauge of production of the district were frustrated during the first week of the present month by the sudden rise in the yield, of from four to eight wells per day, in various portions of the field. Therefore, the only estimate approximating facts that can be given must be calculated through the agency of pipe-line runs and the proper appreciation of the amount of stocks at wells. From these it is assumed that the field, on the 12th inst., was producing about 30,000 barrels per day. As this amount should be increased somewhat, by the new wells that are to come in, especially in the south half of the field, it is quite clear that the field has not yet seen its greatest altitude, and, perhaps, will not be before the first of September.

Then, moreover, the luminary in Forest County has an uninspiring influence upon matters generally. It is not to be presumed for a moment, however, that this is a Cherry Grove spouter. It is safely guarded, and is said to be tubed and yielding all of which it is capable, and is placed in the category of the good Sheffield producers — from fifteen to seventy-five barrels per day. Territory has advanced in the neighborhood in consequence of it, which indicates, at least, some value to the enterprise. The character of the country, however, is pretty well known, and while a belt of fair dimensions is liable to result from this development, yet there is nothing in it that would just now seem to warrant the existence of fear or alarm in petroleum circles. It is discouraging, however, that it should have appeared in any form before Cherry Grove had pretty well subsided; but this is characteristic of oil developments. They arrive always, not when they can do the most good, but the most injury. But it is only a question of the moment with all of these spots, Cherry Grove included. They are not supported, as was Bradford, by a broad expanse of oil formation, whose supply was measured to a degree of certainty by its extent in area. The yield there was steady and changeable only in one direction for years — upward. In Cherry Grove and Warren County generally the yield is as variable as the fortune of the average oil man — up to-day and down to-morrow, and sooner or later destined to "lay down" altogether. While this state of things is in progress the drill has been surely defining the limits of the rich pool, and the production of this, too, can be calculated with some degree of accuracy, and the prospect becomes more bright. While Warren has caused an increase in the total yield, and Bald Ridge has swung itself into line as a promising field of unknown area and production, the northern end of the region has been undergoing changes in another direction. It is true the decline is not as great as the trade might desire, but it is sure and certain for all future time until the end. The pipe-line runs have been so large from Bradford and Allegany that the trade has been misled as to the production of the country, the lines making an exhibit of over 100,000 barrels per day, whereas the total yield of the entire region is only about 92,000 barrels. Stocks in the Allegany field, as well as Bradford, were largely drawn upon during July and early part of

August. Therefore, the pipe runs for these two months must not be taken as a correct guide to the yield. A proper appreciation of the stocks at wells is as necessary as a knowledge of pipe runs, which knowledge everybody possesses.

The aspect therefore, has changed but little during the past month. It is a question of the investment of sufficient capital to store and retain the surplus production for a period sufficient to witness the exhaustion of Cherry Grove only, when the trade will find itself afloat with a declining yield in all parts of the region, except, perhaps, the briney Bald Ridge, and the demand in all the world enhancing largely. We must acknowledge the fact, moreover, that the inevitable wildcatter is abroad in this land, and, like a genuine Arabi Bey, is seeking whom he may de—velop. Let him proceed. It is possible, and quite probable that all the efforts of this class will be required before the end of 1883 to furnish drillable territory sufficient to satisfy the demands for production. It is *the* time for investment of capital in this great product, for, when compared with others, which are used for similar purposes, its intrinsic worth towers so far above them, and so far above its own present quotation, that no one should have fears of its future. This is the picture as the AGE sees it, and it is by no means as dark and discouraging as some might be led to see it.

A careful compilation of facts and figures, recently concluded, shows that 82,000 barrels per day for the latter half of present year will be required to fill all orders and demands of the trade. The situation, therefore, on the 15th of August, would be about as follows:

	Barrels.
Total production of Bradford field,	42,000
" " Allegany "	16,000
" " Warren "	30,000
" " outside "	4,000
Total,	92,000
Total amount required to fill,	82,000
Total surplus per day,	10,000

When Cherry Grove shall have reached its greatest altitude and turned on the down grade, the limited surplus above indicated will soon be lost to sight.

Mr. C. D. ANGELL, of the Angell Oil Co., has purchased an interest in the Petroleum Real Estate Co. and is now located in the elegant office of that institution at Bradford, Pa. Mr. Angell's large experience in the trade should bring increased business, which we understand is always quite large with the Company.

HEAVY OIL REPORT FOR JULY, 1882.

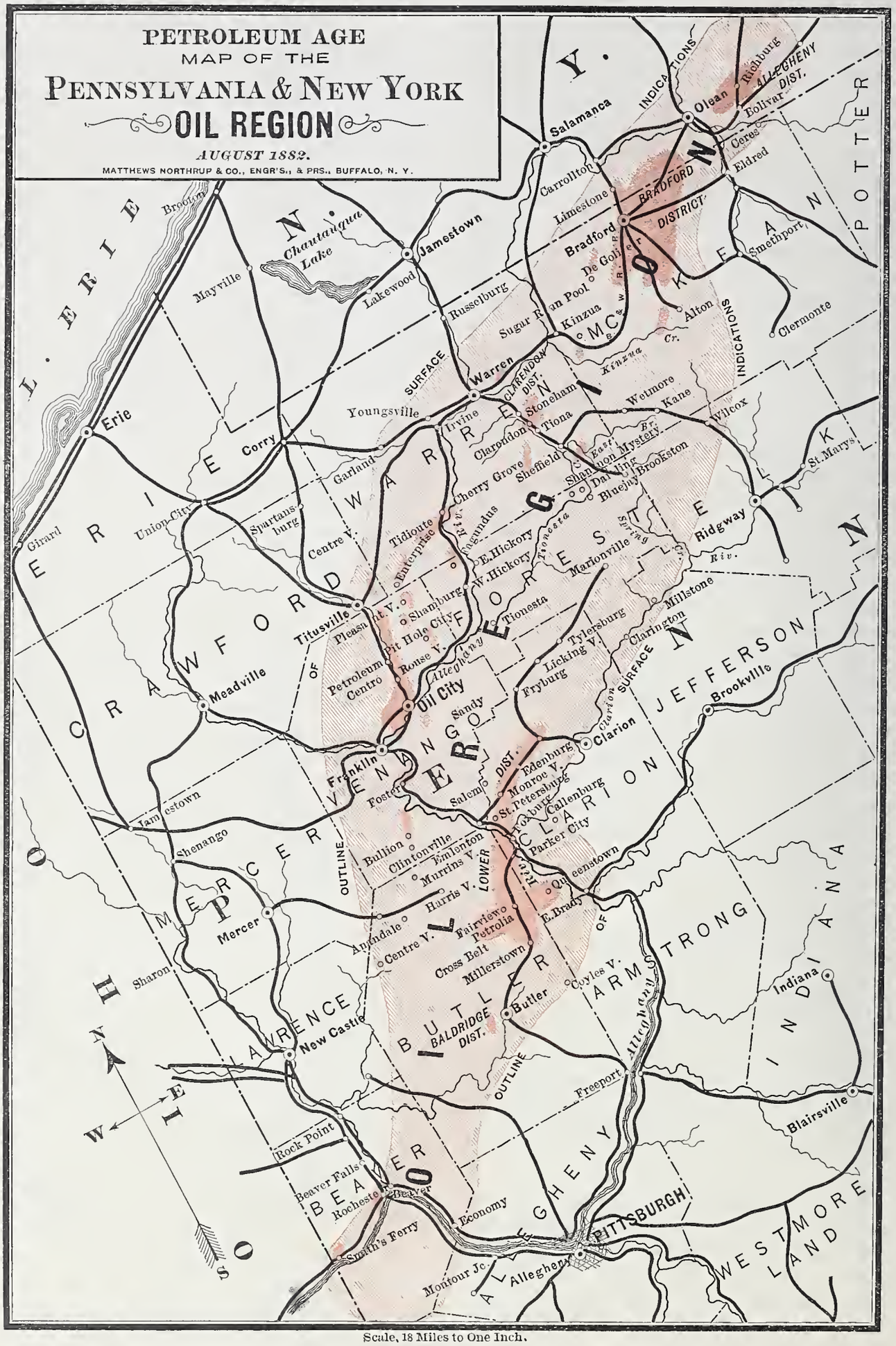
WELLS COMPLETED.

FARM. OPERATOR.	BARRELS.
Horton, Sheasley & Grant	5
Galena, Galena Company	1
Kunkel, Kemph Brothers	dry
McCalmont, H. G. Sheasley	1½
Point, Tack Brothers	2
Stalker, H. McClintock	dry
Smith, Acme Oil Company	1
do do do	2
Galloway, G. Hudson	1
do Crawford & Egbert	3
do Hurley & Smith	1
do Henry Shaw	1½
Snyder, George Snyder	2
Fee, Nesbit & Co	¾
Third Ward, Franklin Oil Works	½
Barrett, Gill & Co	½
Widow Carter, Jacob Sheasley	1
Fee-Kunkel, E. D. Yates	2
Fitzgerald, Tack Brothers	1
Second Ward, William Whann	½
Gillingham, J. H. Cain	1
do W. T. Baum	1
do do	1½
Point, Frank Sutley	1
Frank, Jud Hanna	1
Point, John Amey	½
Evans, D. Grimm	1½
Point, M. Hirsch	1
Frankenberger, Tack Brothers	2
McCalmont, H. F. James	1
Frank, Casper Frank	3
Wells finished	31
Production	41¾
Dry	2

DRILLING OPERATIONS.

FARM. OPERATOR.	DEPTH.
Mooney, Mitchell & Galbraith	rig building
Phillips, Jacob Sheasley	do
Galloway, Moffett & Dunbar	do
Snyder, Nesbit & Co	spudding
Frankenberger, Tack Brothers	rig
Galloway, John G. Bracken	500
Toomey, Jacob Sheasley	200
Galloway, Henry Shaw	rig
Fee-Kunkel, J. Hindman	100
do E. D. Yates	400
Galloway, H. G. Sheasley	300
do H. F. James	rig
Fee-Kunkel, N. Smith	600
Gillingham, J. H. Cain	100
do W. T. Baum	rig
do do	rig
Lamb, W. C. Howe	drilling
Evans, D. Grimm	rig
do do	rig
do Frank Sutley	drilling
Wesley Carter, Sheasley & Grant	rig
Point, W. W. Duffield	rig
do Rial & Sons	building
do L. Weineman	rig
do Acme Oil Company	sand
Galloway, Crawford & Egbert	150
Shippen, E. W. Shippen	200
Redman, J. & T. Algeo	drilling
Galena, Galena Oil Company	rig
Kunkel, Sheasley & Grant	rig
do do	rig
Neeley, C. E. Smith	rig
Galloway, Mattern & Swan	rig building
Frank, Casper Frank	rig building
Drilling	13
Rigs	20
Total	33

THE well at Nile, N. Y., is producing 3½ barrels per diem.


PETROLEUM AGE
MAP OF THE
PENNSYLVANIA & NEW YORK
OIL REGION
AUGUST 1882.
MATTHEWS NORTHRUP & CO., ENGR'S., & PRS., BUFFALO, N. Y.
Scale, 18 Miles to One Inch.
Salamanca
Olean
Bradford
Jamestown
Chautauqua Lake
Erie
Corry
Warren
Titusville
Meadville
Oil City
Franklin
Venango
Mercer
New Castle
Butler
Pittsburgh
Allegheny
Beaver
Clarion
Brookville
Ridgway
St. Marys
Kane
Smethport
Eldred
Ceres
Limestone
Carrollton
Youngsville
Irvine
Stoneham
Tiona
Wetmore
Wilcox
Clermont
Sugar Run Pool
Kinzua
Alton
Russelburg
Lakewood
Mayville
Girard
Union City
Spartansburg
Centre V.
Garland
Cherry Grove
Sheffield
Clarendon
Tidioute
Enterprise
Pleasantville
Shamburg
Pit Hole City
Rouse V.
Petroleum Centre
Tionesta
E. Hickory
W. Hickory
Marionville
Tylersburg
Licking V.
Fryburg
Millstone
Clarington
Callenburg
Parker City
Queenstown
Foster
Salem
Edenburg
Monroe V.
St. Petersburg
Fairview
Petrolia
Cross Belt
Millerstown
Harris V.
Murrins V.
Bullion
Clintonville
Fimlanton
Shenango
Jamestown
Sharon
Rock Point
Beaver Falls
Rochester
Smith's Ferry
Economy
Montour Jc.
Freeport
Blairsville
Indiana
Coyles V.
Armstrong
Westmoreland
Bradford District
Allegheny Dist.
Clarendon Dist.
Baldridge Dist.
Lower Oil Sand
Surface Indications
Outline
Oil Creek
Conewango Creek
Kinzua Cr.
Allegheny R.
Clarion R.
Riv.
Crawford
Erie
Warren
Venango
Mercer
Lawrence
Butler
Armstrong
Indiana
Jefferson
Clarion
Forest
Elk
McKean
Potter
Cattaraugus Co.
Chautauqua Co.
Pa.
N. Y.
Ohio
W.
E.
S.

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Bradford Express.	Fast Line.	New-York Time.	Fast Line.	Pittsburg Express.
.....	1.40 P. M.	Ar.....Richburg.....Lv	6.45 A. M.	1.40 A. M.
.....	12.30 "	" .....Olean..... "	8.00 "	2.45 "
7.50 P. M.	10.50 A. M.	" .....Bradford ..... "	10.00 A. M.	4.30 P. M.
6.15 "	9.20 "	Lv.....Kinzua. .....Ar.	11.40 "	6.00 "
5.30 P. M.	8.45 A. M.	" .....Warren..... "	12.06 P. M.	6.40 "
4.42 "	7.26 "	" .....Clarendon..... "	12.55 "	7.57 "
3.10 "	7.30 "	" ..... Titusville ..... "	1.30 "	.....
3.20 "	6.40 "	" .....Oil City..... "	2.20 "	8.55 "
2.00 "	5.40 "	" .....Franklin..... "	3.10 "	9.45 "
12.43 "	3.30 "	" .....Foxburg..... "	4.27 "	12.10 "
12.13 "	3.18 "	" .....Parker..... "	4.38 "	12.27 "
9.00 A. M.	9.45 P. M.	" .....Pittsburg..... "	7.50 P. M.	6.20 A. M.

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THE PETROLEUM AGE.

VOL. I. BRADFORD, PA., SEPTEMBER, 1882. NO. 10.

PETROLEUM.

CHAPTER X.

The First Big Oil Suit — Progress of Developments During the Year 1868 — Operations at Pleasantville — Short-lived Territory — Church Run — A Narrow Belt — "A Queer Character" — Developments at Oil City, Scrubgrass, Parker's Landing, Foxburg and Fagundas — General Remarks on the Condition of Trade from the Summer of 1868 to 1869.

IN August, 1868, was inaugurated one of the most exciting oil cases the Oil Region has ever witnessed. Its progress was watched with intense interest by all the leading men of the trade, as the result involved the liability of agents and brokers to losses sustained by principals. It was known as the Tack-O'Connor case, and grew out of certain transactions in oil wherein O'Connor — who was plaintiff in the case — was a seller through the Tack Bros., as brokers, and Lockhart & Frew, Chas. Lenning & Co., Emil Schack, the National Storing & Refining Co., Kirkpatrick and others, were purchasers. It appeared at the trial that O'Connor, who had made a tour of the Oil Regions during the summer of 1867, for the purpose of inspecting the operations, had formed the conclusion that the daily production of the country was much greater than the demand for the article warranted, and, as a consequence, the price of oil must go lower than the ruling quotations at that time. Approaching Tack Bros. on the subject, he instructed them to make sales to the parties above named of certain amounts of oil for future delivery. For the immediate future Mr. O'Connor had calculated with some degree of acuteness, for within a very short period from the date of the transactions named, which were all consummated on the same day, he had a fair margin in his favor. This, however, he did not see proper to take in, as he expected a much larger drop in prices. As with many others who speculate in this kind of a way, so it was with Mr. O'Connor. Something sometimes gets behind the market and booms it just when least expected. And when it starts upward there is no telling at what point it may make a halt. It was especially so of those days. A rise of 25 cents, 50 cents, $1.00, and even $2.00, a barrel, was not an infrequent occurrence, and within such a limited space of time as to give "shorts" no chance of escape whatever. In the case cited this condition of things prevailed to an alarming extent. The market, one day, very soon after the trades were consummated, started upward and went so far as to leave Mr. O'Connor in the rear many thousands of dollars. This gave rise to suspicions on the part of Mr. O'Connor that a combination, composed of the Tack Bros. and the other parties above named, had been entered into for the purpose of "bulling the market." He decided that it was a case of conspiracy, and, in August of 1868, instituted proceedings against all the parties named. Before proceeding any material distance, however, he dropped all the names from the charge and the case but the Tack Bros. These gentlemen were held, at the preliminary examination, to answer at the regular term of court. It was then that O'Connor telegraphed from Philadelphia to the editor of the Pittsburgh *Dispatch*: "Glory to God, the Tack Bros. are held." But the course of the average lawsuit is by no means pleasant or agreeable to the citizen who has other business to engage his attention. Mr. O'Connor found this to be true to the letter in his case. He soon perceived that he was destined to a distressing conflict and probable defeat in the end. A proposition for settlement was made by his attorneys to the Tack's, but the dignity and good name of the latter gentlemen had been assailed, and on their part there was no such word as *settle*. On their books there stood a credit of about $1,000 to Mr. O'Connor, and in September, 1869, it was decided by Judge Strong that Tack Bros. should pay the sum of $600 to O'Connor. This was a disastrous defeat of the latter gentleman, as his claim was laid at from $30,000 to $50,000. It cost the Tack Bros. $59,000 to defend the suit, and they never introduced a witness in court. They presented their case, leaving the judge and jury to decide from the evidence presented by the prosecutor. The decision was considered just by the trade generally. Had O'Connor succeeded in this attempt it would have muzzled the brokerage business of the oil trade, and placed every man in jeopardy who performed the part of middle man in the business. It would also have given a pretext for all kinds of disputes when the market went against one of the parties

to a trade. It was well that this case was tried and fought to the end. It not only settled the question of the innocency of the Tack Bros. of any wrong action in the matter, but it also closed a gap in the range of oil trading that, if left open, might have resulted in serious complications. The case was considered of so much importance, that the oil marts in all parts of the country were advised daily of its progress, and the press of the country was largely supplied with its details.

THE PLEASANTVILLE EXCITEMENT.

During the early part of the year operations moved with considerable haste from the vicinity east of Shamburg in the direction of Pleasantville. Finally, a well was ventured by James, the spiritualist, and others (an account of the locating of this well will be found in the first number of the AGE) in an open field near the village above named, on the southwest side. This resulted in a hundred-barrel producer, and, of course, attracted the attention of a large share of the oil trade for the time being. The same intense desire to acquire possession of territory in the neighborhood that characterized the operators elsewhere, was apparent here, and soon the entire surface of a belt extending from the village southwestward three and a half miles was the scene of the liveliest activity and commotion. The greater part of the territory, or belt, thus marked out lay through farms rich in agricultural products. These latter, however, were considered of small moment when compared with the product supposed to underlie the surface. For this reason the farms, with all their fields and crops, were given up to be slaughtered by the marching hordes of the oil army. As the wells came in one after another along this line, they proved to be quite productive, and each added fresh interest to the new oildorado. The village itself did not escape the ravages of the rig and drill, as many lots within its confines offered suitable sites for producing wells.

The oil produced here was of a very dark shade, bordering on jet black, and was inferior to what was commonly termed "creek oil" for refining purposes. The rock from which it was taken was also of a very poor quality, and appeared to be a bastard formation of limited dimensions as to thickness, its average depth not exceeding 14 feet. The wells were so thickly drilled upon this belt, which did not exceed half a mile in diameter, that they lasted, above the paying point, only a short time. A few companies were led into the belief at the outbreak that a rich deposit existed, and proceeded to drill at an extensive rate. Among these were Collins Bros., who figured at that time in the oil trade very prominently. Their wells numbered thirty-four, besides the numerous interests held in other enterprises conducted under other titles. Mr. George K. Anderson was also an extensive operator at this time, and gave this field special attention. This gentleman was the largest individual operator, up to the time of which we write, in the region. His career commenced in 1864, at Petroleum Centre, where he was quite successful. He pushed the drill with great vigor, having at one time twenty-eight wells drilling. Before the breaking out of the excitement in the northern field he made 350 holes in the ground in search of oil, which, figured at a cost of $3,500 each — a low estimate, perhaps, for the average well of those days — gives a total expenditure of $1,225,000. The excessive drilling by Collins Bros. in the Pleasantville district was said to have hastened their failure for $200,000, which soon afterwards followed. About one thousand wells were drilled in the field, which extended northeastward from the village about one mile, where it ended abruptly. The bottom seemed to fall out of the district so hastily that everybody interested seemed anxious to depart as quickly as possible. It was, therefore, only a short time till the moving masses were marching upon some other territory. The Pleasantville field can hardly be stated to have played an important part in the production of the world's great illuminant. It appeared, cut a rather beautiful figure in the heavens, and was gone. Its total yield never exceeded 1,000 barrels a day, and the aggregate for the year only measured 200,000 barrels.

CHURCH RUN.

It seems that whenever an old field is about to expire a new one is brought forth. This is a result of the wild-catters' work always. The most out-of-the-way places and unpromising localities sometimes are developed by this method into the most promising and productive oil fields. About the time of Pleasantville's decease, Church Run territory began to attract attention. Church Run is a small tributary of Oil Creek, joining the latter at Titusville. Many of the Pleasantville operators proceeded thither and were well rewarded. The area of territory that produced good paying wells was limited, but the wells were quite productive, and the price of oil had also improved somewhat. While Church Run was being drilled, Enterprise, a small town in the southwest corner

of Warren County — as will be seen by reference to the map published last month — was calling attention to her deposit. This was determined finally to be of limited proportions, and, though it gave rise to some speculation and moderate production, it never reached the altitude of an excitement. Numerous farms were tested on the line between this point and the Triumph Hill section, near Tidioute, and more or less oil was obtained nearly the whole length. The oil conglomerate, however, was very narrow in the intervening section, and was found to be shattered and uncertain in crude oil relations.

Aside from these, the drill was urged in many other previously unexplored regions. Already the country south of Franklin, along the Allegheny river, as far down as Foster Farm and Scrubgrass, was receiving admiration at the hands of oil men. Mr. C. D. Angell had succeeded in obtaining some nice wells on the island, near Scrubgrass, which lies directly west of the Bullion pool, and was directing his footsteps in the direction of Foster. To this latter point he was propelled through the agency of the belt theory, which he conceived and introduced to the trade. At the same time the narrow streak forming the Reno belt was out as a candidate for the honors of oil. It received them in due course of time, but the belt was the most insignificant, so far as diameter was concerned, ever discovered in any country. A driller from the locality remarked to the writer that he sunk a hole 5½ inches in diameter, one half of which was in good territory, while the other half was in that which was entirely dry. This was perhaps drawing it pretty fine, but it indicates the nature of the sand rock, and the necessity of exercising care in locating on the line. It was not an uncommon occurrence to witness from three to half a dozen wells on each acre of ground. In such cases the derricks were planted as near to each other as it was possible to place them. As a consequence these "edifices" arose with supreme regularity along this narrow way, and in very close proximity to each other. The line extended from Charley Run, just below Oil City, to the river at Reno, where it seemed to come to a sudden halt.

A QUEER CHARACTER.

Meanwhile, operations in the vicinity of Oil City, which had apparently been neglected for a few years, were again resumed. Spurs of rock seemed to protrude from the main body in nearly all directions. One of these was traced to Cottage Hill, the dwelling-place of a large share of the population of Oil City, and during the following year caused a commotion in the suburb by turning out some very good wells. Southwest of the city, on the Charley Run section, a man by the name of Hains, who might be termed a queer character, had deposited himself for a life lease on a piece of land whereon he expected to obtain wells of the capacity of from one to two barrels of oil per day. He wanted nothing better, and if a well undertook to yield a greater than the prescribed amount — two barrels — he declined to receive it. He proceeded to sink a dozen or more of these wells, one after the other, and succeeded in acquiring a comfortable fortune by the process. His appliances were all of the finest description, and everything on his premises was kept in as perfect order and condition as a garden. The derricks, and, in fact, the entire rigs, were painted white, and the floors of the engine houses were as perfect and clean as those of the parlors of the inhabitants of the city itself. A spot of grease was not allowed to remain on the surface in any part of his possessions, and the visitor did not fear to approach clothed in the most delicately colored garments, even to white. A beautifully painted fence enclosed the premises, and nicely trimmed and decorated trees adorned the enclosure, making it one of the most interesting scenes the Oil Regions have afforded. This is the only instance of the kind of which the region could ever boast, and this was owing to the eccentricities of a man who, though apparently unbalanced in mind, was yet sufficiently clear and sound to make a grand success of what he undertook.

OTHER DEVELOPMENTS.

On the flats at Parker's Landing during this season a couple of wells were drilled, which, though small, were of great importance to the trade, as they produced oil of a superior quality, from a rock of promising characteristics. At Foxburg, three miles above Parker, it was also ascertained that oil existed in some degree. The importance of the discovery, however, was not realized for about one year, when there was a great rush to the region, the details of which will command attention at a future time. In addition to these new spots, there was rapidly developing another, which was accounted of some significance. This was the Fagundas section, at the northwest corner of Forest County, and including a portion of Warren. For about four years David Beatty, Esq., and Mr. Miles, another old resident of West Hickory, had produced oil

in small quantity from a few wells drilled during the excitement which was occasioned in that latitude by the rush of operators from Pithole. The oil produced by the wells of Messrs. Beatty and Miles was of the light or illuminating species, while farther down the creek, where the first operations were conducted, the oil was of the heavy grade. This fact led the Grandins, of Tidioute, to the conclusion that further developments were liable to prove satisfactory. As a consequence, during the spring and summer of 1879, several wells were sunk in a northerly direction, all of which proved productive and caused some inquiry for territory in the latitude. The winter of 1868 and 1869 found the country in a prosperous condition. The development at Pleasantville, which was the only one of any importance that had occurred during the year ending January, 1869, and this was now rapidly waning.

TOWN GROWTH.

In no particular was the prosperity of the region more easily seen than in the growth of the various towns which depended upon oil production for support and business generally. The village of Pleasantville, which had existed as the centre of a large agricultural community from its birth, and was, at the hour of the opening of the greasy vaults beneath, a small rural hamlet, having no pretensions to greatness or aspirations for notoriety, now began to adorn itself with new and more pleasing features. It was beautifully situated on a slightly elevated plateau, and was just ripe for a leap into an important oil centre. It was located six miles from Titusville, and was connected with the latter by the Pithole & Titusville plank road. Pleasantville was the home at the time of a few of Venango's honored men. The Hon. M. C. Beebe, Hon. Judge Couley, Samuel Q. Brown, Esq., and others of some note in the region made the place head-quarters.

The title "City" which of late years characterized nearly all of the hamlets and small or great groups of houses erected by the sudden impulse consequent upon new oil strikes did not begin to be applied with such remarkable regularity until a few years later than the date of which we write. Titusville, Oil City and Franklin were the three principal towns of the Oil Region at this time. The first was organized as a borough in 1848, and up to the date of the Drake development did not contain more than 200 souls, including the settlement adjoining. Joseph L. Chase was the first Burgess. The town improved with great rapidity until 1867, when a city charter was granted, and a full pledged city organization with mayor, common and select council, uniformed police force, school-board, etc., etc., was perfected. At this time it was estimated to contain 8,000 people. Two daily papers flourished, and banking and all other interests connected with the oil development flourished in a high degree. The *Daily Herald* was launched forth as a venture entailing hazard in 1865, by Messrs. Bloss & Cogswell, the present proprietors, except, however, that there were two Bloss's at the beginning, one having disposed of his interest some time afterwards, and removed to the far West. The paper was a great success from the start, and taking hold of the oil trade interests it established for itself a name the whole length and breadth of the business that was indeed enviable. The oil department was conducted by Sam W. Blakely, a young man of more than average intelligence, but whether through mercenary motives on his part, or on the part of the proprietors, or through some other agency, not known to the public, the regular monthly report which appeared was condemned on account of its one sided attitude. This shows the necessity of making statements through oil journals that can always be relied on as absolutely correct. The paper, however, flourished as the interests of the city and county flourished and in 1867, a rival daily journal — the *Courier* — was floated, and continued in circulation for twelve years. Up to this time Oil City and Franklin supported weekly papers only, but the country was by no means in that condition of prosperity and population that warranted adventure in this direction.

Aside from the towns above named which occupied the principal positions so far as the commercial affairs of the region were concerned, there had sprung up a score of villages, whose duration depended strictly upon the extent and magnitude of the producing territory surrounding. On Oil Creek these were numerous. Commencing at Shaffer Farm, and following the Creek, we find the ruins of Pioneer, Petroleum Centre, Columdia Farm, Tarr Farm, Rynd Farm, Rouseville, McClintockville, etc., etc. At that time the town usually assumed the title of the owner of the farm upon which it was located. They were composed of perhaps a few dozen houses, constructed of boards in the cheapest possible manner. Titusville, Oil City and Franklin were more substantial and proceeded to reconstruct with brick. All that was considered oil territory lay between Tidioute on the Allegany River at the northeast, and Franklin at the southwest. This was a dis-

tance of about 35 miles. Then the diameter was calculated by Titusville at the west, and Tidioute at the east, a distance in that direction of about 15 miles. Upon this area was comprised all there was of Oildom — all there was of life and activity. Nor were the towns alone the only centres to which the influx of population were attracted. On the contrary, the rough wooded hill sides and rocky valleys of some of the most deserted and forlorn-looking corners of the region, or the Universe for that matter, were made pleasant and agreeable by the cheering prattle of children, and the appearance of houses erected for their comfort. Wherever the pioneer oilman proceeded thither he was followed by the man of commissary proclivities. He is necessary as an adjunct to the success of all undertakings, and many a lonely swamp where the wild birds, foxes, panthers, bears, wild cats and other reptiles had all that existed under their own government and rules, was converted into a garden spot where the voice of hilarity and the pleasing sound of industrial implements were heard. It should be understood by the outside world that some parts of Oildom and large portions of Western Pennsylvania are covered by a dense growth of hemlock, whose depths are seldom explored, except by the stray traveler who may have occasion to find his way through them by the only route marked out when the country surrounding was first settled and surveyed. Then the surface is mountainous. Immense hills rise abruptly from narrow valleys, and in many cases these hills are covered with huge blocks of solid conglomerate, oftentimes as large as an ordinary building. They tower above everything surrounding in surpassing grandeur, and cause the beholder not only to admire but to wonder at their presence. They give voice to science in some degree, by pointing to a time in creation, or perhaps within the age of man, when the region was terribly convulsed by some important changes that were transpiring in Nature's condition in the hour of labor. Here in many places in McKean County, Pa., and Allegany County, N. Y., can be seen what may be termed villages of these great rocks. They seem, as at Rock City, Cattaraugus County, N. Y., ten miles from Bradford, to form perfect quadrangles, and are separated in blocks so as to appear in regular order of cities, as if constructed by the gods for street convenience. These "villages" stand out on the brow of the most elevated hills, and are visible several miles distant when the condition of the valleys is such that a view from afar can be taken at all. One is led to wonder at and magnify the power in Nature that produced such effect. There were enormous convulsions no doubt. The movements of ice in that age perhaps had something to do with them, but just why these great blocks should have been pure conglomerate, similar in form and texture to that from which oil is obtained more than 2,000 feet beneath them, is one of the other strange features that becomes inexplainable. It seems that the great

"OIL TRACK"

extends much farther than most people believe. Its circumposition has been thought of by but few. There seems no reason why the oil belt does not encircle the Globe, though not continuously. Its general bearing is 45° from northeast to southwest across the American Continent, and traces of the substance have been found at intervals, all the way from Nova Scotia, or the Gulf of St. Lawrence, to the Gulf of Mexico, touching each State in its passage. The chain, however, is broken at many points, which fact renders it very uncertain of obtaining the liquid in paying quantity except where the evidences of rock formation and constitution are true and unmistakable. Could a perfect circle be traced around the globe, it is not improbable that oil could be obtained on it at various points not yet dreamed of. The agencies, in the construction of the earth, that combined to produce the rock and the substance it contains in Pennsylvania, were certainly performing duty in other parts of the world in the same circle or zone. Therefore, South America and some parts of Europe and Asia should contain them. It is not probable, then, that the supply of the article will ever drop very far below the point of need, though such an event might occur for a short season at any time.

THE TIDE OF PRODUCTION.

The tide of production that had swept over the region during the year 1867 and early part of 1868 had began to ebb, and prices, as a consequence, began to ascend the scale. In August the daily average yield of the region was figured at about 12,000 barrels, but the probabilities of depleted sources and a large increase in the demand combined to force the price to $4.75 at the wells. In January, 1869, the price was $5.75, and territory that looked in any way promising was very valuable, and large profits were made by producers everywhere. Over 3,500,000 barrels were produced during the year, at an average price of $3.40. The year 1879 came upon

the scene, with the new field of Fagundas fairly open for business, and this leads us to a new era in the history of the country.

(TO BE CONTINUED.)

DEPARTMENT OF SCIENCE.

COMBUSTION WITHOUT FLAME—THE CINCINNATI EXPOSITION—YOUNG MECHANICS, ETC., ETC.

A NEW theory of combustion was practically illustrated by Mr. Thomas Fletcher, of Warrington, England, at a soiree of the Society of Chemical Industry at Owens College, the results being so totally unexpected that many present would and in fact did go away with the impression that some deception was being practiced. Mr. Jacob Reese, inventor of the Reese fusing disk, has stated his belief that if it were possible to produce combustion without flame the temperature and duty obtained from any fuel would be enormously increased. Mr. Fletcher not only has proved the possibility of flameless combustion in more than one form, but also has demonstrated practically the enormously high temperatures which can be obtained by this means.

Taking a ball of iron wire about three pounds in weight, Mr. Fletcher placed it on a slab of fire-clay, and directing a blow-pipe flame on it for a few seconds, he suddenly blew the flame out. The temperature increased so rapidiy that in a few seconds the wrought-iron fused and ran into drops, and this temperature was steadily maintained. The room was darkened, but the closest examination did not show a trace of flame, although the fact that the gas was burning was proved by repeatedly relighting and extinguishing it. The same experiment was repeated in another form by directing the flameless heat into a small fire-clay chamber, in which a refractory clay crucible, made especially for nickel melting, was partially fused and worked into a ball-like soft putty, the sides of the fire-clay chamber being at the same time fused. The heat was so great that the blow-pipe laboratory, which was given up to Mr. Fletcher for the evening, was much too hot to be agreeable, in spite of open windows and ventilators. How far this discovery can be utilized remains to be seen, but it would appear that the presence of flame, usually considered to be a sign of combustion, is really an indication of imperfect results, and the best duty is to be obtained only when flame is totally absent. It is certain that such temperatures as those obtained by Mr. Fletcher without flame have never previously been obtained with the fuel used, which was nothing more than a small gas-supply for a quarter-inch pipe assisted by an air-blast.

THE Ninth Cincinnati Exposition opened to the public on Wednesday, September 6th, 1882, with appropriate ceremonies, and will continue to ask patronage for one month. The opening day was celebrated with an allegorical pageant of extraordinary splendor, excelling everything heretofore attempted in the way of a street parade. The citizens of Cincinnati had been preparing for this event several months. In point of attractiveness the display is second to none ever held in America. The Exposition building was erected expressly for the purpose, and its cost of over one million dollars fairly represents the liberal ideas of those promoting the enterprise, and is a guarantee that the Exposition will be successful beyond precedent. The city is gaily and profusely decorated, and special programmes of an unusually interesting character have been arranged at the famous hill top resorts, at the Zoological Garden, and other places of amusements in the city.

It is evident that the stranger visiting Cincinnati during the Exposition will cheerfully recognize the justice of the claim that, so far as attractions are concerned, the "Paris of America" is no unsuitable appellation for the Queen City of the West.

The Pittsburg, Cincinnati & St. Louis Railway Company—Pan Handle Route—commenced the sale of excursion tickets to Cincinnati and return on September 5th, and continue until the close of the Exposition, October 7th.

Tickets will be sold for all regular trains, and will be good for five days from and including date of sale.

IF young mechanics, as a rule, would fully realize their own usefulness, and assert their own individuality, others would feel the benefit of their awakening as well as themselves. There is no class of the community upon whom the welfare of the country more essentially depends than upon the rising generation of young mechanics. If they are intelligent, sober, industrious, and, consequently, independent, able and accustomed to judge for themselves, and governed in their conduct by an enlightened view of their own best interests; if they are men of this sort, the mechanics, and especially the young mechanics, will form, in conjunction with the young farmers of the country, a bulwark against monopolies and corrupt politicians, and save the republic. If, on the other hand, they are ignorant, idle, dissolute and, consequently, poor and dependent upon those who are

willing to trust them—if our mechanics should unhappily become such a class—they would soon be converted into the mere tools of a few rich and artful men, who, having first stripped them of every sense of self-respect and every feeling proper to virtuous citizens, would use them as passive instruments for promoting their own ambitious objects, and for the enactment of laws which are beneficial to nobody but the few artful and base demagogues with whom they originate. It is as true of the mechanical arts as of any other profession, that "knowledge is power."

THE ELECTRIC RAILWAY AT WEST END, NEAR BERLIN.—Electricity is gradually but steadily replacing gas and petroleum for lighting purposes, and now is even beginning to replace steam as a motive power. But few electric railways have been built as yet, but a number of them are projected; among them one from the foot to the summit of the Wartburg, near Coburg. * * * * The current is not conducted to the electric motor through the rails, as has been customary heretofore, but separate cables are used, which are supported by insulators sustained on poles about fifteen feet high. These cables run parallel with the tracks, and the motor is connected with the cables by a double conductor attached to a small carriage running on the cables. This carriage is drawn along on the cables by the car or engine, and takes the current from the cables, delivering it to the conductor connected with the motor on the car. The West End Spandauer Bock Electric Road has some quite steep grades, the hill near Spandau being especially bad; but, nevertheless, the car, which, when filled, contains twenty-four persons, is moved at about the same rate of speed of a freight train. The probability is that all electric railways constructed hereafter will be provided with separate conducting cables and a carriage thereon for conducting the electricity to the engine. Mr. Warner Siemens is the constructor of the above-mentioned electric railway.

THE marked feature of ancient bridge-building was the thickness of the piers. The famous old bridge at Verona had a pier 39 feet thick, though only 11 feet high. In old London Bridge the piers were so enormously thick that the available waterway at low water was less than one-fourth of the width of river spanned by the bridge. The London *Builder* thinks that the modern tendency is to make the piers too light. Of late years no country in Europe has seen more remarkable bridge-work than Italy. Signor Mosca's bridge over the Dora, at Turin, is a masterpiece of construction.

EXPERIMENTS have been made in England with a gas lamp composed of two pipes, one of which supplies gas in the ordinary way and the other air slightly compressed by the weight of a column of water. Upon the burner is a cap of fine platinum wire gauze which, a few seconds after the current of mingled gas and air has been ignited, gives forth a brilliant incandescent glow like that of the electric lamp. Arrangements have been made for lighting a number of London thoroughfares with this light, which, it is asserted, is cheaper than the ordinary gas light.

AFTER the most faithful efforts of the managers of the street cars in Paris to substitute steam power for horses, they have given up the job. For five years they have used steam, during which period they tried twenty-one different forms of engines. The companies now discard steam and return to horseflesh as on the whole the safest, most economical, and most satisfactory.

OUR steel rail industry consumes more than one-third of the pig iron that the country produces.

MARKET CHANGES.

THE price of oil touched the lowest point, 49¾ cents, during the first week of July that it had reached in nearly eight years. In November, 1874, the average price was 55 cents, but oil was, of course, sold down in the forties, 45 cents being the lowest price recorded. A year from that date it was about $1.55, and in 1876, a year later, it averaged $3.73, making a grand average for the year of $2.56. Again, in 1879, during the great flood of production from McKean County, prices fell in midsummer to 65 cents. What was termed "immediate shipment oil," however, was from 8 to 10 cents a barrel lower. "Immediate shipment" had no real merit as a scheme, and its adoption by the shipper appeared more in the form of an excuse for his inability to transport the product as rapidly as desired by producers than anything else, and was never understood by the trade. Orders were received at the discounting rate, with the assurance that the oil would be run from the overflowing tanks at once, but the cases were few where this promise was fulfilled. However, August of that year gave the lowest rate and in December following the average price for the month was $1.18, $1.25 being the highest point reached. It soon declined to the neighborhood of $1.00, where it

hung for some 60 days, and again floated lower. Since that time it ranged from 70 cents to $1.00, making an average for 1880 and 1881 of about 90 cents. Unless some unforeseen event occurs in producing circles, the present year will show the lowest average since 1861. When that year rendered an account it exhibited the appalling spectacle of an average price of 51 cents. Of course, 1882 will exceed this somewhat, but it will not have a very flattering record. If the country should be visited by a few of the changes that characterized its early days, there would be some interesting scenes in store for it yet. In 1864, in July, 2½ years from the 10-cent market, $14 a barrel was paid for the stuff, and it was scarce at that. Half that price would help the boys out now, wonderfully, but where would the ungodly shorts appear?

THE HAPPY (?) OIL PRODUCER.

IF there is a class of men on the face of the earth that should be assigned to the land of promise it is that class which comprises the producing fraternity of the oil-trade. But few are aware of the difficulties encountered, and the perplexities which are met with, by these men in the conduct of their business. While the sun shines, and the weather generally is fair, and a little prosperity is heaped upon him, the average producer is always found to be in good spirits and a happy mood. Unlike almost any other specimen of the human family, moreover, he never seems to tire of "trying again," even when misfortunes follow him in rapid succession. But when he is seen plodding through mud over his shoe tops, and prowling around among his wells through pouring rain at all hours on all days of the week, anxiously laboring to secure all the production possible from his property, his case is not so very inviting after all. He will go farther, undergo more privations and run more risk to make ends meet than any other business man known to the country. The visitor to the Cherry Grove field, during a heavy rainstorm, would require no very powerful persuasive to force him to this conclusion. The same is true to a certain extent of the class of laborers who follow up every new excitement. These, with their families, huddle together in tents and board shedding, that are sometimes about as capable of holding water as a sieve. Therefore, those who desire to witness Oil Region life in its reality should not fail to visit Garfield and the country surrounding. When the rain falls and the floods come the country has more the appearance of desolation than great prosperity. All days are alike, so far as their reverence is concerned, except in rare instances, and by eccentric individuals, who hold the fear of God before their optics. But the oil producer, who, when at his home with his family, would uphold the practice of regular attendance on Sabbath school and church, and would probably chastise a healthy and robust child for "staying out in the wet," will complete an oil well, torpedo the same, or have machinery placed in position, ready for action, on Sunday with the greatest complacency. This, however, is a diverge line from the path marked out at the beginning. All that need be said now is that those who think the oil producer's ship always has easy and pleasant sailing should stay at Garfield a week in changeable weather and see for themselves.

AN UNHOLY CITY.

THE most distressed specimen of the human family, mentally, that has been seen in the city for some time was a man of gentlemanly appearance, who traveled the main thoroughfares of the city, the other evening, from end to end in a fruitless search of the bookstores for a copy of —Shakespeare? No! nothing less, however, than the Bible. Of Ingersoll's Works, Byron's, Tom Payne's, and O'Brien's Police Documents, there was an abundance, but of the Bible — none! Of trashy ten-cent novels, which fills the mind of the youth with desires for reckless pursuits, and aid largely in corrupting the morals thereof, there were whole shelves of them, but of the Bible — none! Verily, the tastes of the multitudes who now dwell in this land is seriously effected, or else there must be something troubling the waters of teachers and instructors of the people in the matters contained in the book. Somebody should start a book-store for the benefit of the unfortunate stranger of orthodox propensities who might happen to linger for a few days within the environs of this great but unholy city.

WILD-CATTING.

AT the northeast corner of Warren County, and extending up into the State of New-York, some large leases, for fresh wild-cat wells were recently made. The Union Oil Company just before the striking of the mystery 646 had secured, through a third party, leases to the amount of several thousand acres. After that sad event the Union people concluded they did not want any more wild-cat property, so agreed to return the

leases to the owners, on condition of the return of the money expended in obtaining them. This was accordingly agreed to, and Morck & Falconer became the purchasers. These gentlemen had disposed of their interests in Cherry Grove at good round figures, and felt willing to deposit a $1,000 for profit or loss in the new quarter. They now have a well drilling on the property, which has been enlarged to 4,500 acres, all in the form of leases at one-eighth royalty. Aside from the well being sunk by them, there are three others in various stages of progression. These are located between the Morck & Falconer venture and Russelburg. The territory embraced in the body mentioned is bounded in part on the east by the Allegheny River, beginning as far south as Kinzua Village. A belt or pool is thought to exist east of the North Warren and Glade developments, which might be true, with a few stray doubts thrown in for variety.

THE REAL ESTATE TRADE.

THE dealings in oil real estate were lighter for August than for some months previous. So far as values are concerned, however, there has not been any very marked change from former quotions in either district. In Warren, where so much activity ruled during June and July there was a remarkable depreciation in number of transactions, but good, promising property was held nearly as high on the 1st of September as on the 1st of August. A lease on the centre, or bordering thereto, could not be obtained at any price that the would-be purchaser would feel like paying—hence the small number of transactions. One half the oil, and a bonus of a couple of thousand barrels of oil, or $1,000 cash, were still the requirements of the party who would dispose of a location at all. At the southwest, however, on lots 680 and 681, where the territory is supposed to be at least good for 100 barrels a day to the well, from $200 to $250 per acre, and from one-eight to one-fourth royalty, according to location, are the ruling prices asked. But few trades are making, even at these figures. About thirty sales have been made of various interests since last month, amounting to about $100,000 in the aggregate. The transactions varied in importance from a few thousands to twenty thousand dollars. Some activity has been visible in Forest County lands, which have been selling at various prices from $50 per acre in fee to $150, and one-eighth royalty. Lands which bring the latter price are located, of course, near the Balltown and the Shannon Wells. Large blocks are sought after by some of the wealthiest of the oil companies of the region, and it will not be strange if the greater part of the territory along the Tionesta, all the way from Foxburg to the capital of the county—Tionesta,—changes ownership within the next three months. The general impression seems to be that Forest County is to be the mother of a fine oil development in the immediate future, and whether she fulfills this prediction or not, the speculator who is possessed of capital to risk will no doubt be induced to take chances in her forests. The new railroad that is being pushed to completion from Edenburg, Clarion County, and the lower country, through the centre of the county to Sheffield, will have much to do with the future welfare of the county. There are vast areas of timber lands that must increase in value, and the man who strikes on to a block at timber prices will feel that he has at least two chances in his favor for getting even some day. Production here in the Cherry Grove field can be purchased at cost of drilling, and in some cases less.

BRADFORD.

In this field there is little doing. Old wells are disposed of without regard to any schedule of rates or prices that may have been established heretofore. From $500 to $1,500 is asked for wells, according to location, production and surroundings. The same is true of

ALLEGANY,

except that property here is considered of greater worth than at Bradford, and the ordinary well actually commands a better price. As a rule, purchasers, who are principally local capitalists, figure on returns from a sixty-cent market, which makes the chances largely in their favor. It is a strange circumstance in this oil business that while oil is very low but few outside capitalists can be persuaded to touch it. On the other hand, let the market boom a quarter of a dollar or more on the barrel, and the country would be flooded with buyers of oil property. This, of course, refers to the business universally The total sales foot up 425,000, of which about 250,000 was deposited in Forest County lands.

THE Cherry Grove Oil Company of Warren, Pa., has made a purchase of 1,200 acres of the best oil lands in the field, and have entered into a contract for the drilling of ten wells. This company will doubtless be one of the largest producers.

CHERRY GROVE.

Interesting Details of Oil and other Operations in the New Field.

(Regular Cor. of the Age.)

GARFIELD, September 10th.—The Cherry Grove field witnessed its highest yield about the 1st inst., since which time there has been a rapid decline with variations—sometimes a slight increase and again a decrease transpiring. The new sections that were added during August—lots 658 and 672—served to increase the production, but, to effect this, lots 635, 619, 610 and 611 have shown a deplorable disposition to go out of the producing business altogether. On the 1st day of September five wells could not be found capable of producing in the aggregate 1,000 barrels a day. The great majority of the wells were yielding not to exceed 100 barrels a day, and many of them were far below that point. It is a fact to be regretted that the operators in nearly all cases have been "sold" in their estimates of the territory. In other words, they are left. They find, instead of receiving a thousand barrels a day for a period of ten or fifteen days, at least, they are compelled to accept from 100 to 300 barrels, as the largest allowance. This is a big drop, and, of course, there is a corresponding drop in the brow of the average producer—noble, brilliant and bright as he usually is. When, at the opening of the field, if he was so fortunate as to obtain a favorable site for a well at reasonable rates, he began to figure, first, what he should do with his surplus production, and, second, just how much of it he would sell, he now scratches the hair off his bald head while trying to figure just how he is going to get out without losing all he invested. The truth is, a few land-owners who had gained a good foot-hold at the outstart, and who disposed of their possessions at large bonuses, are those who have realized largely from investment, and they are the sum total of that class. The producers, in their mad haste to drill for 1,000-barrel wells, deposited nearly all their spare change in exchange for a spot upon which to sink a well. Then when it came to defraying the expenses of the operations, they had not the wherewith to meet them. As a consequence, there have been more unpaid drillers and other workmen in the vicinity of late than one would think possible from the reports of gushers that have gone out into the world.

It is well known that the land owners take leasehold mortgages for all indebtedness of lessees for bonuses, and these cover all material that may have been placed upon the lease. When the leases were taken and mortgages given, it was presumed by the lessee that it would require not to exceed fifteen days for him to become clear of debt and be reimbursed for all outlay on the premises secured. But in this, as in the general course of the oil market, he has been woefully mistaken, and there are grave doubts about his being able to even remove the mortgage in many instances. The land owners now view the case with some alarm, and in order to save themselves from danger of loss compel the lessees to leave all property of every description which they may have placed upon the premises where it will do the most good in case of a foreclosure for back bonus. Thus the average Cherry Grove producer labors at the present time to find an outlet for himself and maintain his good standing in financial circles. The life, rush and extraordinary excitement witnessed one month ago is no more to be seen. The highways, that were then literally thronged with moving masses of humanity and freighted vehicles hauled by four-horse teams, which caused frequent blockades in the narrow passes, are comparatively free of all this at present. The narrow gauge railroad, from Clarendon to Garfield, has been completed, and nearly all the heavy freight now enters by that route. The importation of goods, moreover, except in the case of the supply of fittings for the wells, has almost entirely ceased. But few new rigs are building, and the consequence is, a period of thirty days should serve to place the field among others that have preceded it on the declining, decaying and uninteresting list. It is even now rapidly passing to that unenviable condition, and great is the regret of those who have planted and are disappointed in the prospects of the forthcoming crop.

ESTIMATES ON PRODUCTION.

During the month of August there were completed 171 wells in this field, whose aggregate yield was 22,640 barrels on the last day. Prior to August there were fifty-six wells producing, whose aggregate was about 13,000 barrels, making a total of 35,640 barrels per day, as nearly as it could be calculated. A few days prior to the 1st of September it is supposed that the highest point the field ever reached, or, further, ever will reach, was attained somewhere in the neighborhood of 40,000 barrels. As the older wells of the lots on the north end of the string have declined to moderate producers—in the vicinity

of 80 barrels apiece — and, as the new ones on lots 658 and 672 at the southwest are rather of the light order, it is not to be supposed that even the present yield can be maintained. The last well completed at the southwest — Goldsborough on 681 — is not capable of much above 100 barrels a day, which for a new venture alone in the desert is not saying very much. Of course, the question of

EXTENSION OF TERRITORY

to the southwest must be considered in the calculations of the field's future. The Shannon Well on the Cooper tract, which is in the southwest corner of warrant 2991, as seen by the maps published in the July AGE, and which has attracted the attention of the trade for more than a month, together with the Granding & Kelley venture on warrant 5236 west of Balltown, must be admitted to the regular list of producers. It is, however, impossible to give a correct statement of the worth or value of either. The most reliable data are obtained by closely watching the movements of the parties interested in the ventures. Those who purchased lands in the vicinity of the Shannon strike have made desperate efforts of late to dispose of their properties, or any part thereof, and at figures not so very far above the purchase price. The trade can therefore draw its own conclusions. It is established, too, that the same parties who control the Shannon mystery have been heavy buyers of oil of late, but this cannot be verified. They had been working with the well in one way and another, but just why and wherefore would be as difficult to ascertain as the temperament of a Nihilistic mass-meeting.

THE BALLTOWN STRIKE.

This venture seems to bear closer relations to the Cherry Grove belt than the former, but it is beyond the ken of this scribe to relate its true inwardness. It possesses a character, nevertheless, and one that has a disgusting side for the "bull" element of the trade. It is nearly a month old, and has produced thirty-five or forty barrels a day. It is located on a 35° line from the centre of the Cherry Grove field, but as the latter dwindles in magnitude of production at the southwest, serious doubts arise as to the probability of a connection between the two. The Balltown, or Grandin & Kelley Well, is therefore situated in close connection to a deposit particularly belonging to the section in which it is found. Of course, the probable extent of such a deposit, is a matter that no sensible man would undertake to estimate. The only true method to adopt in such cases is to wait and see. Once in twenty years a Cherry Grove is developed. This may change, however, and the unchained regions of deserted Forest County may proceed to give us one every 20 months. The man, moreover, who would figure on such a future would probably get as badly left as were the unfortunate producers of Cherry Grove, who gave all the oil and money for the privilege of making fools out of themselves in punching the ground full of holes and letting the oil and gas escape.

So we must leave the Grandin & Kelley venture for future discussion. The well is located west of all other wells drilled in the neighborhood about one mile. In the others, some oil was found, but not in paying quantity. In this, it is supposed that it commenced flowing oil before the sand had been tapped to any great depth, though, in this, the outside world might be badly fooled. It will probably be opened during the next month or two.

THE TYLERSBURG MYSTERY.

As will be seen by the AGE maps a well has recently been drilled west of Tylersburg in Clarion County. It is not well situated as regards the belt line, being too far to the east. But the character of the rock found in that quarter would not lead to exalted opinions of the latitude as an oil centre. The well is in the hands of the Anchor Oil Co., who have paid for the privilege of knowing how the old thing would work. These are the most important features of the Warren County field at present, and AGE readers may make their own inferences.

STRANGE TREATMENT OF WELLS.

The reports of salt water appearing in many of the wells on the upper or northeastern half of the field in great abundance is not true so far as the "great" is concerned. There are evidences, however, of its existence, as is usually the case in territory that is so extraordinarily prolific. But the greatest difficulty encountered at the present time is the failing of the gas supply. It is not the water alone that causes wells to cease flowing. It is the natural consequence attending the exhaustion of the vital fluid. Over on lot 618, only a few rods south of the Guffy Well, which about the 1st inst. was yielding over 300 barrels a day, a well was completed, that would not flow at all. The oil remained in it, quiet and dead. A 30-quart shot was administered for its relief, and the result was the Guffy Well was boomed to double its capacity, while the one shot made scarce an effor to clean itself.

In other parts of the field shooting has been conducted to such extremes that the wells are virtually made worthless. They stand one shot very well, contrary to first impressions of the field. The second, however, while it causes a temporary increase in yield, causes the sand to run in, filling the hole to near the top of the oil rock quite rapidly. This is easily removed, but it is the third shot that causes the trouble. The sand caves to that extent that it is with the greatest difficulty that it can be removed, and as soon as work commences in that direction the well commences to decline. If it is doing 200 barrels it will drop a quarter the first day, and so on, while the cleaning progresses until, when completed, it must be again shot to force it to produce at all.

PRODUCTION TABLE.

SHOWING THE TOTAL DAILY NET YIELD OF THE PENNSYLVANIA OIL FIELD FROM SEPTEMBER, 1859, TO AUGUST 31ST, 1882, IN BARRELS OF 42 GALLONS EACH.

Years.	Jan.	Feb.	Mar.	April.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.	Totals.
1859	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	10	15	18	28	2,173
1860	30	50	89	215	500	1,000	2,000	2,500	3,000	3,500	2,000	3,000	547,439
1861	3,201	4,041	4,800	5,400	6,000	6,100	7,100	8,500	7,000	5,150	5,514	6,716	2,119,045
1862	6,000	5,300	7,400	8,000	9,400	9,000	8,500	11,000	13,000	10,565	8,053	7,238	3,153,183
1863	6,200	6,400	7,000	5,500	6,000	7,603	7,022	8,100	9,200	7,120	9,500	10,260	2,667,543
1864	8,100	6,300	4,500	5,000	7,000	5,100	5,600	5,700	7,180	5,545	10,100	10,320	2,215,150
1865	5,900	5,800	5,000	7,500	8,000	8,000	7,400	6,350	6,400	6,800	7,600	9,350	2,560,200
1866	9,200	9,100	5,000	7,100	8,100	9,500	9,350	9,440	12,000	10,400	11,000	11,165	3,385,105
1867	10,900	8,100	9,000	10,100	10,500	9,000	10,100	10,000	10,100	7,660	9,155	8,313	3,458,113
1868	8,200	9,400	8,100	9,300	11,000	12,400	13,000	11,800	10,250	8,225	7,580	7,150	3,540,670
1869	8,100	8,500	10,000	11,000	13,000	13,000	13,560	13,000	13,500	12,500	11,200	10,625	4,186,475
1870	11,348	11,802	11,509	12,400	15,990	13,400	13,800	15,950	18,203	18,000	17,061	15,990	5,308,046
1871	13,500	13,300	13,082	12,950	13,054	13,882	14,900	15,866	15,555	15,889	15,599	15,841	5,278,072
1872	17,943	17,894	15,680	16,221	17,402	12,140	16,933	17,440	16,598	18,450	25,942	20,630	6,505,774
1873	20,550	21,460	21,830	22,260	24,632	26,361	23,406	30,900	32,500	31,343	33,584	34,680	9,849,508
1874	32,800	30,940	29,760	28,104	29,442	31,222	33,987	32,000	29,461	29,944	29,231	28,101	11,102,114
1875	27,900	26,509	26,012	23,009	23,000	23,805	24,991	23,940	23,800	23,900	23,821	23,594	8,948,749
1876	23,102	25,440	23,560	23,800	24,628	24,400	24,890	25,300	25,900	26,400	26,500	25,900	9,142,940
1877	26,930	27,560	28,860	32,060	36,000	37,440	39,210	42,100	41,321	41,200	39,900	40,120	13,230,330
1878	39,200	39,900	39,200	40,100	41,111	40,820	41,200	42,900	43,999	44,480	45,200	43,900	15,272,491
1879	44,000	43,830	47,960	50,810	52,911	55,600	56,911	59,940	61,498	60,980	58,750	58,231	19,835,903
1880	59,982	63,890	66,215	68,063	72,080	73,104	73,794	74,980	71,941	77,491	76,112	74,080	26,086,692
1881	73,030	69,060	73,900	75,245	79,000	82,460	81,900	79,100	78,231	77,971	77,892	76,642	28,136,353
1882	75,028	74,910	74,751	76,690	78,601	80,469	90,020	98,739	. . .	. . .	. . .	. . .	. . .

Total twenty-three years to December 31st, 1881, ... 186,532,067

CRUDE OIL MARKET.

MONTHLY AND YEARLY AVERAGE PRICE OF PIPE LINE CERTIFICATES OR CRUDE OIL AT THE WELLS, IN BARRELS OF 42 GALLONS EACH.

A. D.	Jan. Ave'age	Feb. Ave'age	March Ave'age	April Ave'age	May Ave'age	June Ave'age	July Ave'age	Aug. Ave'age	Sept. Ave'age	Oct. Ave'age	Nov. Ave'age	D'emb'r Ave'age	Yearly Av'ges.
1859	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	20.00	20.00	20.00	20.00	20.
1860	19.25	18.00	12.62½	11.00	10.00	9.50	8.62½	7.50	6.62½	5.50	2.75	2.75	9.
1861	1.00	1.00	1.00	.62½	.50	.50	.50	.25	.20	.10	.10	.10	.
1862	.10	.15	.22½	.50	.85	1.00	1.25	1.25	1.25	1.75	2.25	2.25	1.
1863	2.25	2.50	2.62½	2.87½	2.87½	3.00	3.25	3.37½	3.50	3.75	3.85	3.95	3.
1864	4.09	4.37½	5.50	6.56	6.87½	9.50	12.12½	10.12½	8.87½	7.75	10.00	11.00	9.15½
1865	8.25	7.50	6.00	6.00	7.37½	5.62½	5.12½	4.62½	6.75	8.12½	7.25	6.50	6.87
1866	4.50	4.40	3.75	3.95	4.50	3.87½	3.00	3.75	4.50	3.39	3.10	2.12½	3.59
1867	1.87½	1.85	1.75	2.07½	2.35	1.90	2.62½	3.15	3.40	3.55	2.50	1.87½	2.74
1868	1.95	2.00	2.55	2.82	3.75	4.50	5.12½	4.57½	4.00	4.12½	3.75	4.35	3.41½
1869	5.75	6.95	6.00	5.70½	5.35	4.95	5.37½	5.57½	5.50	5.50	5.80	5.12m	5.63¾
1870	4.52½	4.52½	4.45	4.22½	4.40	4.17½	3.77½	3.15	3.25	3.27½	3.22½	3.40	3.89
1871	3.82½	4.38	4.25	4.01	4.60	3.85½	4.79	4.66	4.65	4.82½	4.25	4.00	4.34
1872	4.92½	3.80	3.72½	3.52½	3.80	3.85	3.80	3.58½	3.25	3.15	3.83½	3.32½	3.64
1873	2.60	2.20	2.12½	2.30	2.47½	2.22½	2.00	1.42½	1.15	1.20	1.25	1.00	1.83
1874	1.20	1.40	1.60	1.90	1.62½	1.32½	1.02½	.95	.95	.85	.55	.61½	1.17
1875	1.03	1.52½	1.75	1.36½	1.40	1.26½	1.09	1.13	1.33	1.32½	1.44	1.55	1.35
1876	1.80	2.00	2.01	2.02¼	1.90½	2.01¾	2.24½	2.71	3.81	3.37½	3.11	3.73	2.56¼
1877	3.53¼	2.70	2.67½	258	2.24	1.94⅝	2.07½	2.51	2.38	2.56¾	1.91	1.80	2.42
1878	1.43	1.65¼	1.59	1.37½	1.35¼	1.14	.98¾	1.01⅜	.86½	.82½	.89⅜	1.16	1.19
1879	1.03	.98	.86¼	.78½	.76	.68⅜	.69⅞	.67⅛	.69½	.88½	1.05⅝	1.18⅛	.85⅞
1880	1.10¼	1.03⅛	.88¼	.78	.80	1.00	1.06¼	.91	.96	.96⅞	.91⅞	.91⅝	.94½
1881	.95½	.90⅜	.83⅜	.86¾	.81⅞	.81¼	.76⅞	.78⅝	93.3–16	.94¾	.83	.84	.85¾
1882	.83¼	.85¾	.80⅞	.78½	.69⅞	.54½	.56⅞	.58¾	. . .	. . .	. . .	. . .	. . .

THE DIARY OF AN OILMAN.

WHILE prowling through the wilds of Cherry Grove an AGE man accidentally came across a small pass-book or diary, from which a few extracts are given below. They may prove of interest to some, and the publication will doubtless lead the owner to a knowledge of the whereabouts of his lost log-book. It appears the owner had been a heavy seller of oil, judging from the distress expressed in the latter clause of the record. It begins by the bold announcement that he struck Warren, April 3d, forty-eight hours after "All Fools'" day, giving him a fair show for being on the same list. Then follows a number of entries as follows:

April 4th.—Took supper at the Carver House; very good, except the beaf steak, which I think Ed. Parshall, the ostensible proprietor, had manufactured expressly to play a joke on me. I told the handsome waiter to take it out, and chaw it, or pound it softly for me, I didn't care which; would prefer the chawing process. There was a regular rush of oilmen from Bradford, Richburg, Titusville, Oil City, and everywhere. Every man had a strip of paper on which there were squares, figures and dots, and each had something to say to everybody else, and a man, named John Galloway, galloped around in the crowd as if he owned the whole district and wanted somebody to take it off his hands. I watched the movements of the crowd, but did not say much. Retired at 10.30, tired after the journey from New-York.

April 6th.—Met L. H. Smith, president of the New-York Oil Exchange, and "up" Vandergrift, and Geo. Wetmore, and Cal. Payne, and some more fellows. Had a high old time last night. Smith is ——l, so to speak. He can flop any man I ever saw on a game of bluff and can laugh so as to make it felt farther than any man or woman on the continent. You see he is a heavy-set man with a short neck of more than average thickness, and, contrary to all rules of science or religion, has a strong prejudice against women.

8th.—Am tolerably well up in the parts of this oil business. I was not aware that a man could make so great a success in so short a time. It seems to be an easy matter when a fellow gets on to the right track. I procured 4 lots on 619, at $1,000 each and half the oil. Let me see: 4 wells at 1,000 barrels each for 365 days, 1,460,000 barrels, one-half of which is mine; 730,000 barrels at ——— at the wells. I think by what the brokers say, some of them, that it will be $2.50 before the year is out. Good enough!

15th.—Played poker with the boys at the Carver House last night. Have a peculiar sensation in my stomach and head. We are thirsty, too.

17th.—Slept under a tree last night in Cherry Grove. Was told by B. N. Hurd that if I could ascertain the condition of the Murphy Well I could make a hit. I came mighty near getting the latter, but as to the "condition" I have nothing to say.

24th.—This morning I started early for the big mystery. Met Bob Armor, Phil. Roth, Fred. Hays and Doc. Book in the woods. They had been holding a camp meeting, so to speak, in the neighborhood of 590. Fred. H. looked very calm and composed, and Roth "smoled" gently, while Doc. looked the picture of the only wise man that ever lived. Before I had time to make up my mind what I wanted to say, or to whom I wished to say it, Capt. Grace — a small man, who seemed agitated somewhat, as he struck at once for a hemlock tree that stood close by and commenced whittling at it's butt with a penknife, and at one time halted and undertook to snatch his mustache from the roots — joined the party. The conversation, however, was what I was after; but I knew about as much when I left as when I arrived, except that I had neglected to ascertain just what the showing in the venture was. I have always blamed myself for stupidity in that instance, a crime of which I am seldom guilty.

26th.—I worked Geo. Wetmore and Murphy last night for a couple of locations at a $1,000 bonus, and they agree to take all the oil, by which I am to be saved the storage and other annoyances. Am troubled with the Garfield cramps this morning.

27th.—Got news by wire this morning that No. 1 was in and flowing 2,500 bbls. Sold short 40,000 at 58c. She dropped to 56; ordered broker to cover. He did so, and drew on me for $800. This was a puzzler: but he explained that there was no oil for sale until the market reacted to 60. There were no sellers meantime. Cuss the luck!

28th, 9 P. M.—Land dealers must think I was born with both ears stuffed full of brains, and a bar of solid gold running straight through me. Had to procure the services of big Sam Magee to pull me through the crowd. What leeches they are! Seems to me that every man in town, even bark peelers, have turned to map makers and land grabbers.

29th.—The whole town is on a drunk.

WHAT PEOPLE SAY.

THE PETROLEUM AGE, in its August issue, publishes a map, which shows at a glance the entire oil region of Pennsylvania and New-York. It is very neatly executed, and valuable to all parties interested in petroleum.—*Oil, Paint and Drug Reporter.*

WE have received Vol. 1, No. 9, of the PETROLEUM AGE, a neatly printed and well-edited magazine, devoted to the interests of the petroleum trade. It is published at Bradford, Pa., by the AGE Publishing Company.—*Greenville Argus.*

THE PETROLEUM AGE, a carefully edited monthly, at Bradford, Penn., devoted to oil interests, takes a hopeful view of the situation.—*Cincinnati Inquirer.*

THE PETROLEUM AGE, a monthly journal, published in Bradford, Pa., is a valuable production for persons who are interested in oil.—*Elmira Advertiser.*

THAT excellent periodical the PETROLEUM AGE is out for August, better than ever. The contents are of a newsy, entertaining character, yet contain a vast amount of solid information that the trade will do well to study over. A complete colored map of the Pennsylvania and New-York oil regions is a valuable feature.—*Bradford Daily Era.*

THE PETROLEUM AGE, for August, publishes a very comprehensive map of the whole Oil Region. It shows at a glance all there is of producing territory, together with every important railroad centre and every oil development, great or small. It is, indeed, the most satisfactory oil map we have seen, and reflects great credit upon the enterprising editors of the AGE.—*Bolivar Sunday Leader.*

ONE of the most valuable oil journals now published is THE PETROLEUM AGE, issued at Bradford. It contains full and reliable reports of all operations, in the most attractive form, and is issued monthly. When bound in book form it is very valuable for reference. Always save the numbers. Copies can be seen at this office at any time.—*Titusville Sunday World.*

THE PETROLEUM AGE for August is at hand. It is without doubt one of the best numbers yet issued. It is replete with statistical and general information of interest to oilmen. The AGE stands to-day without a peer in the line of oleaginous publications, and it should be taken by all oilmen. The current number contains the best map of the oil country yet published. It is published at Bradford, and edited with ability.—*Oil City Blizzard.*

WE are in receipt of the August number of the PETROLEUM AGE. To say it is rich in the number and variety of its contents and in the interesting character of its articles, is merely stating the naked truth. With each succeeding number it grows more interesting and of greater value to the producer, or to any one connected with the oil business. We advise our oil friends to subscribe for it. It is cheap at $5 per annum. —*Petrolea Record.*

THE AGE MAP FOR SEPTEMBER.

AGE readers are supplied in this number with a connecting link in the map chain of Warren and Forest Counties, which shows the location and relative positions of the recent strikes and mysteries in Forest County. The map is drawn so that its north side fits on to the south edge of the maps published in the July number; lapping sufficent to place Balltown in both. This is done in order to reveal the relative position of the Tylersburg and Balltown Wells. The former by actual gauge should be half a mile further southwest than indicated, but the position as regards the oil belt, which some are disposed to think passes through there, is not changed by this. It is impossible to give the most recent changes in ownership of the lands comprised in this map, but the warrants and subdivisions are drawn true and perfect. AGE subscribers will be furnished on application with a copy of all the maps thus far printed, all on one sheet, for the moderate sum of 10 cents, which will be but little above cost of printing. These AGE maps are always to be relied upon as regards lines and location of towns, wells, creeks, etc.

NEW STORAGE CAPACITY.

THE following table showing the amount of tankage, with the various locations and owners as furnished by the officials of the United Lines, to the *Bradford Era*, gives a correct idea of what the Pipe Lines are doing in this direction. The statement is for the month of August.

Location.	*No.*	*Owner.*	*Capacity.*
Olean	9	United	321,550
Colegrove	3	"	107,100
Wellsville	1	"	36,400
Tiona	2	"	72,000
Vandergrift	1	"	35,200
Farnsworth	1	"	36,000
Tiona	3	Anchor Oil Co	105,500
Tiona	1	Munhall & Smithman	36,050
Tiona	1	Book & Hays	36,000
Farnsworth	1	M. Murphy	36,000
Total	23	Total	821,800

TABLE SHOWING TOTAL PRODUCTION OF CRUDE PETROLEUM IN PENNSYLVANIA AND NEW-YORK OIL FIELDS, AND CONSUMPTION.

From 1859 to 1881, Inclusive.

Year.	Oil Creek Division. Bbls.	Pithole District Bbls.	Tid'ute and Fagundas District Bbls.	Central All'g'ny Divis'n. Bbls.	Butler, Armstr'g & Lower Allegany Bbls.	Clarion Division Bbls.	Bradford Division Bbls.	Bullion District Bbls.	Warr'n Div. Bbls.	Beaver Div. Bbls.	Alleg. Co., N. Y., Div. Bbls.	Yearly Total. All Districts. Bbls.	Consumption. Bbls.	Yearly Average Price.
1859	2000	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	2000	500	20.00
1860	500000	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	500000	300500	9.60
1861	2113609	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	2113609	1280000	.49
1862	3056690	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	3056690	1472000	1.05
1863	2611309	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	2611309	1992800	3.15
1864	2216109	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	216109	1946620	9.87½
1865	1585200	912500	20500	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	2518200	2238610	6.59
1866	2302700	1095000	490000	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	3887700	2574401	3.74
1867	2393300	814000	839900	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	4047200	2960561	.41
1868	2672617	445500	729000	26000	. . .	. . .	. . .	. . .	. . .	. . .	. . .	3873117	3404645	3.62½
1869	3462500	365000	535000	22500	45000	. . .	. . .	. . .	. . .	. . .	. . .	4430000	3716341	5.63¾
1870	2745528	173585	723838	713150	918644	. . .	. . .	. . .	. . .	. . .	. . .	5274745	4562642	3.89
1871	2040263	182054	697887	1083386	1091458	310293	. . .	. . .	. . .	. . .	. . .	5405341	5178038	4.34
1872	1429685	145065	847199	881140	2658080	829079	. . .	. . .	. . .	. . .	. . .	6790248	5954742	3.64
1873	1094389	119864	895983	851934	4402563	2526231	. . .	. . .	. . .	. . .	. . .	9890964	7847953	1.83
1874	734247	55770	373325	564978	5160265	3921267	. . .	. . .	. . .	. . .	. . .	10809852	7875145	1.17
1875	504639	35130	351407	343905	4712702	2821214	18509	. . .	. . .	. . .	. . .	8787506	9256416	1.35
1876	611884	37450	354284	333640	4755623	2377700	382768	64220	51337	. . .	. . .	8968906	10414877	2.56¼
1877	734858	60380	312700	474262	5431072	3021120	1465451	1306342	151371	62085	. . .	13019641	11977107	2.42
1878	686948	60000	308780	363710	4552815	2276408	6482400	505265	108300	92490	. . .	15437116	13783672	1.19
1879	389400	36500	227900	258652	2876787	1438342	14268945	289591	45550	82100	. . .	19913767	16851222	.85⅝
1880	335342	36500	168542	166143	1737969	868984	22343202	146672	91655	102956	. . .	25997965	18228905	.94½
1881	293504	31938	146474	145374	1394706	844442	22817975	128338	438000	102956	607106	26950813	21263740	.85¾
	34516721	4706236	7022719	6228774	38737684	21235080	67779250	2440428	886213	442587	607106	186502798	155081437	3.92¼

RECAPITULATION.

Production by Fields.—1859 to 1881, Inclusive.

Oil Creek Division, including Shamburg, Pleasantville and Enterprise,	34,516,721	Clarion County,	21,235,080
Pithole Division, including Henderson, Morey and Ball Farms,	4,706,236	Bradford Division, including Elk County,	67,779,250
Central Allegany, including Scrubgrass and West Hickory,	6,228,774	Bullion Field,	2,440,428
Butler and Armstrong Counties, Lower Allegany Division,	38,737,684	Warren, Stoneham and Clarendon,	886,213
Tideoute Division, including Economite, Henderson, Farms, etc.,	7,022,719	Beaver (Smith's Ferry) Division,	442,587
		Allegany Division,	607,106
		Total all Divisions, Production,	186,502,798
		Total Consumption,	155,181,437
		Difference,	31,421,361

This difference includes, of course, all available stocks on hand, all sediment and worthless surplus, and the amount estimated for shrinkage, which would reduce the available stocks to the figure given elsewhere.

This table is made to show the amount of oil saved and used. It differs but little with the first production table published in the AGE, and was compiled by a producer who possesses valuable records.

Area of Developed Territory.

Venango County, Pa	25,600 acres.	Clarion County, Pa.	19,200 acres.
Crawford County, Pa.	6,400 "	Butler County, Pa.	28,000 "
Forest County, Pa.	3,420 "	McKean and Cattaraugus	63,800 "
Warren County, Pa.	11,000 "	Allegany	18,360 "
Armstrong County, Pa.	5,120 "		
Total			180,900 acres.

This covers all territory productive, whether light or small, as yet discovered in the States of Pennsylvania and New-York.

SMITH'S MAP.

MR. J. L. SMITH, the greatest map publisher of the State, has just issued a new map of the Warren and Forest oil fields, which is the most comprehensive yet offered to the trade. It gives every new feature in the form of towns, villages, post-offices and land owners' names, together with railroads proposed and completed, pipe lines, etc., etc., to date. It is furnished in pocket form for $2.00; cloth, $3.00, and rollers $4.00 and $7.00. Mr. Smith has a peculiar faculty for touching the right spot in the map business, and no doubt will be largely rewarded for his efforts in the present case.

A MAN, named Wightman, has completed a well in Elk Township, Warren County, a dozen miles northeast of the village of Warren. A show of oil was obtained.

THE PETROLEUM AGE.

DEVOTED TO THE

INTERESTS OF THE PETROLEUM TRADE.

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BY THE AGE PUBLISHING COMPANY.

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W. A. MOSSMAN, *Business Manager.*
W. J. McCULLAGH, *Editor.*

SUBSCRIBE for the AGE and be happy once.

THE showing of stocks abroad is not as damaging to prospects as some would have us believe.

HON. LOUIS EMERY, Jr., who has just made a tour of the greater part of the Eastern world, favors the AGE with some very valuable information concerning the movements of oil across the big water.

THE Buffalo Board of Trade wants a "freshening" office opened in that city by the United Pipe Lines. The oil trade of Buffalo is growing, and its demands will undoubtedly be supplied by the lines, as occasion may require.

THE porous or oil-bearing portion of the Cherry Grove sand rock is only from five to ten feet in thickness. One screw or six feet usually opens the cavity from which comes all the oil a well produces. From this it may be inferred that the life of the wells, above the ordinary ten and twenty-barrel producers, will not be very great.

THE new map on the last page will be received by the trade with satisfaction. AGE subscribers now have a chain of maps, showing all the important producing centres of Warren and Forest Counties. The location of the Balltown mystery and the other wild-cat at Tylersburg, Clarion County, is each shown so that their relative position can be easily determined.

THE letter in another place from our regular correspondent at Garfield, Warren County, is a very important document. The fact is stated, clearly, that the light of the field is going out already. At one time the yield was as high as 40,000 barrels, and on the 1st inst. was about 35,000. At the rate of decline indicated it is probable that the total production of the district on the 10th did not exceed 26,000 barrels.

DRILLING in the Bradford and Allegany fields has almost entirely become a thing of the past. If operators had assumed this attitude six months or a year ago, and maintained it, oil would be bringing more than a dollar a barrel to-day. But the hardest labor an oilman can engage in is in keeping still. This he won't do if he has to squander money to keep himself moving.

WE thank the brethren of the press, also all others who have spoken so many kind words regarding the PETROLEUM AGE. We are encouraged thereby to greater exertions in the work of making the AGE a great trade journal. It is truly a representative of a great industry that is destined to lead all others in magnitude of importance ere another decade has closed its evening shutters and entered the night of the ages dead. There is, therefore, some labor to be performed in keeping a correct record of all that is to transpire in the ages to come.

THE average oil producer is a very obstinate specimen of the human race. In nine cases out of ten he will proceed to do the thing he is asked not to do. Talk to him about stopping the drill, and he is off forthwith to *locate* another well. Tell him in all sincerity that there are grave chances of the market going lower, and he at once concludes that it is a good time not to sell his production. If the Standard Oil Co. should make a statement, through any of its agents, of a public character, regarding the oil situation, producers would look upon it as a ruse, and would strike out to do the very opposite from what they would do if they had faith in what they were told. But few out of the whole army make any calculations of the present or future needs of the business, or attempt to ascertain facts regarding the condition of the trade. They see all calculations knocked into "pi" by such developments as the Cherry Grove, and forthwith drop the pencil and cease to figure. Then they go in hap-hazard, swinging their poles for dear life, hoping to drop a persimmons or two while others are doing the same. When it is remarked to them that they are liable to lose money and valuable time, they swear, by the highest court, that they know their own business best, and what is lamentable in the case is, they *do not* always know what is best for them. They fight well, however.

If, as stated by a correspondent from Mendoza, South America, there are valuable petroleum deposits in the latitude, it is a pity some giant corporation of fifty-cent producers from Pennsylvania could not be organized and forwarded to the field at once. Five dollars a can is the value placed upon our product when it arrives in that salubrious latitude. Twenty-five dollars a barrel is a good round price, and should pay the average South American driller handsomely. The difficulty with that country, however, lies with the distressing inconveniences encountered in obtaining transportation. The Andean Railway will, no doubt, supply some of these needs; but, after the Andean Railway, in order to have a genuine oil excitement, it will be necessary, first, to find the deposit, and then the tools and the men to drill for it. When that time arrives, our cans here in Pennsylvania may also be worth a five-dollar note.

It is now reported that the Standard Oil Co. is offering its stock for sale, the capital being placed at something like $70,000,000. That's a big bunch of money for half a dozen men, who were boys a few years ago, serving other people in the capacity of clerks, etc., to make, figuring that the property of the concern is worth all that the capital represents. A company that could make seventy millions in ten years is not very apt to throw its stock on the market or quit the business. If it has made seventy millions, or the half of it, in ten years, with all the outlay it is reported to have incurred in downing opposition, there seems no good reason why it cannot make as many more millions in the next decade, and then the shareholders will still be quite youthful. One thing is certain, much of the property of the company is of that class that must prove very remunerative, as the tide water pipe-lines, for instance, to say nothing of its enormous refining and handling capacity.

The time is ripe for the abolishment of the high tariff system existing between the United States and its northern neighbor, Canada. There is no earthly good coming to either country from the present state of things, and, on the contrary, both would be largely benefited by strictly free trade. We, of course, do not mean that the United States would be largely enriched by such a consummation, but we do say that her border cities would be benefited and as for Canada, her trade in nearly all that she produces would be immeasureably increased. The only Canadian article of commerce worthy of note, that would be seriously effected under a free trade system, would be petroleum, but her sources of supply are so meagre that this would make but little difference. It certainly would be a great benefit to her people at large to be able to secure the cheapest light in the world at the same rate per gallon as their more fortunate friends across the fresh water ponds. Statistics show that for the year 1880 there was a falling off, in the volume and value of trade between the two nations, of $940,000,000, having been only $60,000,000 for that year. This is a ridiculous state of affairs, that should be remedied at once.

Cashier Craft, the defaulting trustee of the Exchange Bank, of Franklin, Pa., seems likely to pass under the rod without feeling much of its weight or smart of its stripes. It seems a peculiar circumstance that a partner in any business enterprise could steal the funds of his associates without incurring the penalty of a seriously violated law. In no part of the world is a stringent law to regulate such matters more deeply needed than in the Oil Country, where the spirit of speculation is so prevalent. The offence of misusing the funds of others should be made by special enactment one of the most serious of the whole catalogue of crimes. In that case many otherwise good and substantial men would be forced to observe the law of propriety in such matters, knowing that to offend would be certain annihilation. It is, however, not always an indication of a depraved character, or of a dishonest heart, that a man becomes a defaulter. He takes the step ofttimes in order to preserve his good name and avoid the stigma always connected with failure. In nine cases out of ten, perhaps, of the defalcations throughout the country the perpetrators commence by erecting a small financial bridge with funds of others they may have access to, and have no more idea of retaining them than they have of committing murder. But once the step is taken, the fates seem to decree that there shall be no salvation till the whole truth is known. It would therefore be well to have a measure of protection against all such deeds, in some form, with severe penalties for violation of trust in any manner whatsoever, which would prove a preventive in some cases at least. The idea that a partner may rob an associate and laugh at the act is preposterous. And it is perhaps true that no class of business men of the country has suffered more on this account than that composed of

oilmen. Innocent parties have been defrauded of their rights in property, and find no redress, even at law, but by a long-winded suit which ends, as a rule, thirty days after the defendant becomes bankrupt. Will not some of our bright legislators think up something that might prove beneficial before the next sitting of the Legislature?

THE EGYPTIAN CONFLICT AND ITS RELATIONS TO THE OIL TRADE.

THERE has been a sickly effort made now and again in this country by some silly and worthless branch of the Irish National Land League, or some so-called labor reform society, to express sympathy with Arabi Pasha, the Egyptian rebel, and denounce England as unjust and oppressive in her war movement. These, of course, fall as flat upon the public sense as did De Lesseps ravings about the English blockade of the Suez Canal. Those who have studied the situation in all of its bearings are among England's friends in this contest. It is true the nation has tyrannized in other instances in her dealings with weaker powers, of which our own forefathers could a tale unfold. But in the present case every element of virtue that belongs to war at all is upon the side of Great Britain in this thing. The cannon's mouth sometimes exerts a much greater influence upon depraved society than the "soft answer" of the missionary or the arguments of the philosophical. Many great and wonderful achievements have resulted from its roar. It is evident that the voice now crying in the wilderness of Egypt, though it is the voice of terror and death for the while, is that voice which echoes peace and good will toward men. Egyptian darkness has remained impenetrable for all the ages past, and was destined to remain so had not the seeds of discord been sowed in the heart of Arabi Pasha. It may be said that it is no matter of ours; that it is none of America's fishing. That is all very well, but America is interested nevertheless. There are vast regions of that country peopled by a semi-barbarous race whose existence is more a damage to the world than a benefit. Civilize Egyptian and Turkish society—and this can be done only through the agency of war—and every commercial interest of not only the United States, but of the entire globe will be enlarged. Turkish cruelties and Egyptian bondage will vanish before the blaze of powder—and intelligence—much more rapidly than by any other method known to the race at the present time. Its effects upon the commerce of the nations will be beneficial, as there are vast hordes of wandering tribes among the inhabitants who may some day become civilized so as to adopt the manners and customs of other and more advanced nations. There is room in Egypt and Turkey alone for a century's hard labor, on the part of science and general intelligence, in elevating the people to even a medium standard. It can be but a question of time, and limited time, perhaps, with Arabi Pasha. After he shall have been subdued will come a time in the history of that country when intelligence will flow to it much more rapidly than ever before. The false systems of despotic government and oppressions in the schools will vanish, religious fanaticisms will crumble away, and the light of the great powers will illuminate recesses of the nation that are not yet penetrated. We can, therefore, foresee an opening for an improvement in trade with our own country. Our "oil mines," especially, will be made to do service in enlightening millions of the sons and daughters of the country who now sit in darkness and have not even read of our greatness. This is the selfish view to take of the case, but it will be one of the important results of the present contest. But whatever is said or thought of England's policy, it is hoped the cannon may continue to roar until the ends of truth and a purer civilization than Egypt has ever enjoyed are fully realized.

THE OIL SITUATION.

IT would be a very easy matter to write a "bullish" article on this subject at this time. This, however, is not our business. We are dealing in facts, as near as they can be ascertained, and can therefore go but a very short distance astray in any direction. Of course, we know that it cannot be denied by any respectable authority that the out-look is much clearer and more promising than it was sixty or even thirty days ago. But the situation has actually changed but little. The star of Cherry Grove, the great, approached the zenith at or about the time expected by a large portion of the trade. Its descent, however, was considerably more rapid than anticipated. During the last week of August the daily yield of that district reached the enormous altitude of about 38,000 barrels. At present writing, September 12th, it does not exceed 25,000, and is flying onward in the same direction with the same velocity, and losing a portion of its tail at every clip of a Robert's torpedo, and making a visible loss of considera-

ble magnitude every successive day. Cherry Grove has been the controlling element in the trade from the day that 646 was known to be possessed of producing abilities. Its control has resulted in great damage to many individuals as well as to the trade at large, and though unworthy the respect paid it, yet demands special consideration at our hands. Never was the producing fraternity more effectually fooled and beaten than in her once charming territory. Never was wilder excitement witnessed among oil producers and speculators than when the three first wells, located at least two miles apart on a regular oil belt of about 45° northeast and southwest, were pouring out liquid riches at the rate of from 1,000 to 2,000 barrels per day. The character and results of this excitement have been discussed on a former occasion and require no comment here. But to show what changes are wrought in a short space of time in this business, attention to the matter has been again invoked. Operators entered the field expecting to obtain a 1,000-barrel well, which would continue to produce at that rate for at least fifteen or twenty-five days. The enormous prices asked and paid for leases were overlooked through calculations of this nature. The history of the trade could not, and did not, furnish a precedent for such results, but the idea seemed to prevail that "old things had passed away, and behold all things had become new," to use an orthodox quotation. Strange as it may appear, however, history again repeats herself in all her significance and majesty. The same rules that governed all the richer deposits that have been developed in former days govern still. Cherry Grove was the richest spot for a period of sixty days ever discovered, but the rapid drilling of wells resulted in a speedy exhaustion of the precious liquids, as defined by our Garfield correspondent elsewhere. The result is that Cherry Grove is doomed to pass out as a factor of importance in the calculations of the sources of supply, and has simply paved the way for the addition of stocks above ground of about 1,000,000 barrels of oil. What a distressing failure when compared with the estimates made at the outstart. It was thought that at least 3,000,000 barrels would be *hauled* to the surface in that district during the season of its greatness, and many had foolishly calculated on three times the amount, and even more.

But here we find ourselves almost back to the point of divergence in March, when the roar of 646 was first heard. Then we had a gross production of about 80,000 barrels, and a net of about 76,000 barrels per diem. At the rate at which the decline of Cherry Grove has progressed for the past ten days it must be admitted that by the middle of October we must behold ourselves struggling hard to keep production above the demands of trade. This, of course, depends upon circumstances in Forest and other counties on the great oil track, where wild-catting is in progress. Nobody, however, feels alarm at the development of small territory. It is that having the Cherry Grove style about it that causes fearful forebodings. It is rather humiliating to the trade, moreover, that wells in a remote locality can be so manipulated as to preclude the possibility of ascertaining their exact status. It *is* very important to know just what a "foreign" wild-cat may or may not do, but it is, of course, reserved for their owners to relate the facts concerning them.

But it is to be presumed from the most reliable data obtainable outside, that these two ventures in Forest County are not disposed to prove of the extraordinary productive class. In that case the day of influence in the market has passed. It would nearly appear so in the case of the Shannon, at all events. Therefore, unless some deposit of greater magnitude than anything which now appears above the horizon, including Cranbury Township, Venango County, and Baldridge, Butler County, we must hasten back to the position abandoned in March last. The daily yield of the entire field must continue to depreciate from this time on until the unfortunate drill is again set at work, which it is presumed it will be as soon as prices resume their former standing up in the eighties. The trade has begun to anticipate all movements in the producing world about six months. It sees what a result would follow the exhaustion of Cherry Grove, the decline of Bradford, which is as yet the great producing centre, the moderate decline of Allegany, and the slow progress made in the way of increasing production in the lower country, and it prepares for the emergency. It is obliged to. Meanwhile the wild-catter is pursuing his wicked work, and nobody knows how soon he may open another pool of some importance. It is not likely, however, that another Bradford district will ever be found in the Warren and Forest Country. Innumerable pools of greater or less magnitude were promised there some time ago, but it is not desirable that many such as the Cherry Grove would be developed, nor is it very probable that they will.

With this view of the case we have nothing of

a very discouraging nature to offer. In fact, we have had nothing of this description for the past sixty days. The fields buckled together make an aggregated producing power, August 12th, about as follows:

District.	*Production, net.*
Bradford	41,500
Allegany	17,200
Cherry Grove	24,000
Including Warren, Outside	7,300
	90,000

This shows a decline from last month, after having elevated the yield for August, over 8,000 barrels a day. These figures are, of course, based upon percentages of decline from the regular statements we obtain on the first of each month. They are, therefore, reliable in every sense.

STOCKS ABROAD AND THE EXPORT TRADE.

IT has been a source of some wonderment why the shipments to North German ports have continued to be so large for such a length of time. The truth is, that last year the German breast heaved with hopes of immense magnitude of the development in the Olheim and Bremerhaven regions of vast sources of petroleum supply.

It is well known that companies were organized, and that work was actually pushed forward in the Olheim country, and that oil in some quantity was found. The idea seemed preposterous that they should expect to obtain enough to supply the nation. Many of them, however, actually believed this, and that oil for export purposes would shortly be produced there. As a consequence, the demand for the American product fell off almost entirely and immediately. It turns out, however, that the total production of the region is only about seventy barrels a day, which is extracted from forty or fifty pits, a drilled well never yet having produced a barrel of oil in the nation. After the excitement bubble bursted, and the dealers found that they had been misled in their calculations, they began to renew orders for the American stuff. Lost time had to be made up, and it is for this reason that a large share of the 150,000,000 gallons shipped to foreign countries this year over and above the amount sent same time last year, goes direct to German ports.

The total exports of petroleum from the United States to Sept. 1st, including that day, were as follows:

1881,	gallons,	390,016,648
1882,	"	433,261,181
Balance in favor of present year,	"	43,244,533
Reduced to barrels crude equivalent, equals,		1,029,631

This showing is very satisfactory, and continues to uphold the position taken by the AGE early in the year, that a large increase would occur in the shipments of this product abroad during the year 1882. Late advices from London are to the effect that there is a constant increase in orders from the interior, as well as also from the Asiatic and Mediterranean ports.

Special advices to BRADSTREET'S, in regard to the prospective European demand, are as follows: Stocks of oil at the seven continental ports of Amsterdam, Rotterdam, Antwerp, Dantzic, Stettin, Bremen and Konigsburgh on September 2, were 1,383,000 barrels. There were afloat for Europe and loading on this side on the same date 824,000 barrels, which gives total quantity of stocks of oil in sight for Europe 2,207,000 barrels. Estimating the European consumption of the four remaining months of 1882 at approximately the same as during those months in 1881, 1,700,000 barrels, it leaves, if subtracted from the present European stocks, afloat and loading, 500,000 barrels on hand, January 1, 1883. But by that time Europe will demand a visible supply of between three and four million barrels, so that it is readily perceived there is every reason to expect a continuance of the heavy exports of oil from the United States which are now being shipped.

AUGUST SALES AND RUNS.

FOLLOWING is a summary of the sales of oil at the Bradford, Oil City, Pittsburgh and New-York Oil Exchanges during the month of August. Nothing less than 1,000 barrel certificate ever sold; each barrel represents forty-two gallons:

	BRADFORD.	PITTSBURGH.	OIL CITY.	NEW-YORK.
January,	23,885,000	11,441,000	27,163,000	
February,	19,412,000	9,153,000	22,207,000	
March,	27,467,000	13,208,000	29,448,000	
April,	22,245,000	8,325,000	19,171,000	15,000,000
May,	39,777,000	21,814,000	38,402,000	35,000,000
June,	29,969,000	20,417,000	38,127,000	21,000,000
July,	48,736,000	22,040,000	31,536,000	22,400,000
August,	34,494,000	16,140,000	50,000,000	20,000,000

Average runs and shipments each month of year to August 31st:

	Total Daily Runs.	Bradford Daily Runs.	Total Daily Shipm'ts.	Bradford Shipm'ts.	Charters.
January,	70,401	62,229	55,798	40,864	33,877
February,	81,853	72,825	63,062	47,183	43,075
March,	81,186	65,758	53,489	38,963	41,080
April,	80,158	67,392	54,413	35,662	35,453
May,	83,397	75,472	56,478	43,329	47,220
June,	89,103	78,701	65,266	47,980	54,829
July,	87,948	65,445	61,779	41,013	34,213
August,	111,243	70,646	66,046	42,500	. . .

THE oil market booms along in the right direction. "Coming events cast," etc.

REPORT
OF
OIL OPERATIONS FOR AUGUST.

WELLS COMPLETED.

Bradford Field.

EAST BRANCH.

Lot.	*Operator.*	*Production.*
Willis, Camp, & Co		10
Clapp, J. M. Clapp, No. 39		12
Deiter, Emery Oil Co., No. 20		12
Morris,	" " 28	10
"	" " 38	10
Tibbitts,	" " 5	12
"	" " 8	12
Dent lands, Whitney & Wheeler, No. 15		20
Jewett, Quintuple Oil Co.		15
Quintuple, Theo. Barnsdall		15

KENDALL CREEK.

Book, Hazlewood Oil Co.	20

COLE CREEK.

Bingham, George V. Forman	dry

FOUR MILE.

Butcher, William Butcher	15
Wells	13
Production	163
Average	14

THE ALLEGANY FIELD.

ALMA.

Lot 18, G. M. Barney	15
22, Wheeler & Co	15
40, Deweese & Weaver	12
Wells completed	3
Production	42
Average	14

BOLIVAR.

Lot 6, McCoy & Weater	15
31, Ballard & Forman	15
37, Pliny Parker	15
37, Moran & Klinger	10
37, Plummer & Co.	15
37, Hickok	15
37, Schoonover	25
38, Cochran Bros.	30
38, "	30
38, Kervin & Allshouse	25
39, Smith & Wellman	30
39, "	25
39, Stevens & Co., No. 5	20
39, Wiser & Kinkaid	20
45, Geo. V. Forman	dry
46, Rice Oil Co., No. 15	20
46, " " 16	20
46, " " 17	25
46, Polar Oil Co.	20
46, Clark & Davis, No. 6	25
46, " " 7	40
46, M. W. Barse & Co., No. 8	30
46, " " 9	30
46, " " 10	25
46, " " 11	25
46, " " 12	30
46, Wiser Bros.	20
46, "	15
46, "	25
46, McLeod Bros., No. 4	30
46, " " 5	30
46, " " 6	25
46, Chauncey Oil Co., No. 2	30
46, " 3	20
47, J. Varney & Co., No. 22	20
55, Knapp's Lease Oil Co.	12
Wells	36
Production	817
Dry	1
Average	22 7-10

WIRT.

Lot 25, Barnsdall & Co.	15
33, O. P. Taylor & Co., No. 13	20
33, M. W. Geary	20
33, Wellman, Miner & Pitts.	20
33, " "	25
41, " " No. 22	35
41, Coast & Rice	20
57, A. J. Thompson & Loan	20
57, E. W. Coleman & Co.	20
Wells	9
Production	195
Average	21 7-9

GENESEE.

Lot 8, Isaac Wilets, No. 27	20
21, Dant & Co.	dry
21, Love Bros.	dry
24, Daggett Oil Co., No. 17	20
24, " " 18	30
24, Hammond & Barton	30
24, Galey Bros. & Co.	20

CLARKSVILLE.

Lot 17, Huston & McKelvy, No. 2	5
17, Bunnell & O'Day	20

MISCELLANEOUS.

Ross Brook, Friendship Oil Co.	dry
Ceres, Ceres Oil Co.	dry
Westfield, Duke, Merket & Co.	dry
Wells	12
Production	145
Average	12
Dry	5

WARREN DISTRICT.

CHERRY GROVE.

Lot 584, Goettel Bros.	dry
590, Mehoopany Oil Co., No. 1	dry
590, " " 2	20
608, C. A. & D. Cornen	15
610, Knox Oil Co.	dry
610, Broder Oil Co.	15
610, Matison & Thompson	150
610, Argue Bros. & Cobb	100
610, Ingham & Co.	dry
610, Johnson & Rathbone	dry
610, Armor, Hays & Roth, No. 2	100
610, Munhall & Smithman, No. 2	200
610, " " " 3	300
610, " " " 4	250
611, Forest Oil Co., No. 2	10
611, " " 6	150
611, " " 7	150
618, C. K. Book, No. 2 est.	100
619, A. A. Richardson, div. 1	300
619, Kervin & Glatzan, div. 2	80
619, Ziegler & Smith, div. 3	100
619, Christy Bros, div. 5	100
619, J. R. Morse, div. 6.	50
619, Zeigler & Smith, div. 8.	25
619, J. H Markham, div. 9 est.	75
619, J. H. Van Worner, div. 11.	100
619, A. A. Richardson, div. 12.	300
619, " " 13.	400
619, P. A. Derby, div. 14	75
619, A. A. Richardson, div. 15	325
619, M. Murphy, div. 5	75
619, " " 10	75
619, " " 4	150
619, Anderson & Humphrey, div. 11.	75
619, Tack Bros., div. 12.	140
619, Zeigler & Smith	200
619, Long, Smith & Co	100
619, Polar Oil Co.	80
619, W. Allshouse	75
619, Cedar Oil Co.	50
619, Mills & Packard	75
619, Taylor & Breneman	80
619, Grogan & Larkin.	75
619, J. B. Andrews	100
619, Akin & Boden, No. 1.	50
619, " " 2.	50
619, " " 3.	50
619, Fertig & Henne, No. 1	50
619, " " 2.	75
619, " " 3.	100
619, " " 4.	120
619, " " 5.	200
619, " " 6.	100
620, C. K. Book & Co.	dry
620, I. B Simpson & Co.	dry
620, McKean Oil Co., No. 1	50
620, " " 2	100
620, Thornton Oil Co.	25
620, Carter & Hurd, No. 2	150
620, J. Snow, No. 2.	120
620, " " 3 est.	150
620, Book & Grace	50
620, "	50
620, "	50
621, Thompson, Filkins & Co.	dry
634, Logan & Co.	dry
634, J. A. Goldsborough	25
634, Wickham & Co.	40
634, Glycerine Oil Co.	100
635, Anchor Oil Co., div. 2	50
635, Frank Wright, div. 6	200
635, N. C. Clark & Co., div. 15	140
635, Sam'l Crosby, div. 16	75
635, Jaynes & Johnson, div. 17	dry
635, Murphy & Co., div. 17	dry
635, J. C. Lineman, div. 19	120
635, Sardine Oil Co, div. 24	200
635, O'Donnell & Bishop, div. 24	125
635, C. Miller, div. 26	100
635, Reid & Breneman, No. 2	200
635, " " 3	200
635, Painter Bros.	100
635, Eaton & Howes	200
635, Beaumont & Drake	250
635, Capt. Tracy	250
635, L. Merket, est.	200
636, Hamshear & Husband, No. 1	150
636, " " 2	150
636, Northwestern Oil Co.	200
636, W. W. Ballard, div. 3	100
636, Bozzell & Urquhart, div. 14	100
636, Winger Bros., div. 14	75
636, Halleck Bros. & Johnson, div. 12	250
636, H. P. Proctor, div. 12	100
636, A. J. Gartland, div. 13	100
636, Roy & Henry, div. 13	150
636, S. Comfort, div. 25.	100
636, Nickle Oil Co.	80
636, W. A. Rix & Co.	75
636, R. Caldwell, div. 11	125
636, B. F. Palmer,	60
644, Breneman & Co.	dry
645, Rockland Oil Co., No. 1	100
645, " " 2	150
645, McPherson & Co.	60
645, Johnson, Murphy & Co.	dry
646, Union Oil Co., No. 4	200
646, " div. 2	200
646, " " 3	150
646, " " 4	200
646, Taylor and Webster, div. 1	300
646, Kennedy Oil Co , div. 13	150
646, J. O'Neil, div. 18	50
646, Lynch & Snyder, div. 21	250
646, Kennedy Oil Co., No. 1	100
646, " " 2	150
646, " " 3	200
657, J. L. McKinney & Co., No. 1	25
657, " " 13	75
657, " " 24	50
657, Book & Arters, No. 1	200
657, " " 2	200
657, A. Scheidemantle	200
657, A. P. Tanner	200
657, Kuhn & Co.	200
657, Lupher Bros. & Hackett, No. 1	200
657, " " 2	200
658, A. & H. Painter, div. 1	250
658, McBride & Howe, div. 3	200
658, J. R. Goldsboro, div. 4	175
658, J. H. Markham, div. 11	300
658, Caldwell, Boyer & Co., div. 13	200
658, " " 14	200
658, " " 16	200
658, " " 17	200
658, W. Allshouse, div. 18	150
658, Hallock & Johnson, div. 19	200
658, Fisher Bros., div. 22	300
658, Allen & Soules, div. 23	300
658, Barnsdall & Co., div. 24	300
658, Knox & Lecky, div. 25 est.	300
658, A. P. Wolf & Co., div. 27	150
658, W. K. Vandegrift, div. 28	250
658, Jno. McKeon, div. 29	100
658, Boyer, Caldwell & Co., div. 31	250
658, Knox, Leckey & Co., div. 32	250
658, Siggins & Burt, div. 33	300
658, R. Jennings & Son, div. 35	350
659, W. H. Woods	150
659, Grace & Dimmic	100
659, Johnson & Murphy	dry
660, Forest Oil Co.	dry
671, R. E. Green, No. 1	200
671, Jno. McKeon, No. 1	300
672, W. Chambers, div. 1	250
672, Wolsey Ford, div. 3	150
672, Galey Bros., div. 4	100
672, McDonald & Markham, div. 7	dry
672, J. R. Goldsborough, div. 9	380
672, " " 10	200
672, Thornton Oil Co., div. 15	100
672, Anderson & Gamble, div. 16	200
672, Coast & Son, div. 22	200
672, J. H. Healey, div. 27	200
672, Harris & Wallace, div. 28	350
672, H. J. Morton & Co., div. 20	250
672, L. C Stanford, div. 31	200
672, " " 32	220
672, McFadden & Co., div. 33	250
681, N. F. Clark & Co.	200
683, McGrew Bros. & Hunter	dry
Wells,	171
Production,	23,405
Dry,	17
Average,	137

CLARENDON AND FOREST.

Lot 79, Anchor Oil Co.	10
161, Helm & Mealy Bros.	15
543, Marsh & Brown	dry
Balltown, Grandin & Kelly	45
Wells,	4
Production,	70
Dry,	1
Average,	17½

THE LOWER FIELD.

BALDRIDGE.

Weber, Shidemantle	200

VENANGO.

Finchbaugh, A. Dale	25
Brannon, Wolfe & Kugler	8
Pinegrove, Oil City Gas Co.	dry
Wells completed	4
Production,	233
Dry,	1
Average,	58¼

DRILLING WELLS.

BRADFORD DISTRICT.

TUNA VALLEY.

Lot.	*Operator.*	*Depth.*
Scott, pur	Abbott & McGinnis	rig

EAST BRANCH.

Gregg,	McIntyre	drilling
Hawkins,	P. C. L. & P. Co., No. 11	rig
Clapp,	J. M. Clapp, No. 11	100
"	" " 22	rig
Deiter,	Emery Oil Co., No. 21	800
Morris,	" " 41	300
"	" " 42	300
"	" " 43	100
Tibbetts,	" " 9	100
"	" " 10	300
Dent lands,	P. C. L & P. Co.	2 rigs
"	Bowen & Wilcox, shut down	240
"	Whitney & Wheeler, No. 16.	500
"	" " 17	300
"	" " 18	rig
Bingham,	Fertig & Henne, No. 9	rig
Sullivan,	Mills & Mullin	3 rigs
"	Book & Co., No. 6	rig
Warrant 2256,	Bennett & Mullin, shut down	sand
Lot 188,	Bingham, John McKeon, No. 5	sand
188,	" " 6.	1000
188,	" " 8.	rig

QUINTUPLE.

Lot 19,	E. K. West	rig
25,	J. S. Wilson	rig
50,	B. F. Brinton	sand
163,	Chemung Oil Co., No. 3	rig
163,	" " 4	rig
175,	D. Atwater & Co.	rig
176,	H. A. Booth & Co.	rig
202,	Butler & Martin	rig
203,	"	rig
260,	E. T. Howes	rig

WEST BRANCH.

Crooker,	Jennings & Co	rig
Cramer,	Chapin & Co.,	rig
Mack,	" No. 7	rig
Stinson,	J. G. Williams	rig

Drilling	14
Rigs	24
Total,	38

KENDALL CREEK.

Storms,	Wright & Sowers	rig

SUMMIT AND RIXFORD.

Dodge,	Dodge & Clark	rig
Irons,	Duke Centre Gas Co.	rig
Leedom,	Robert Gregg	rig

FOSTER BROOK.

Willets,	O. Smith Oil Co.	rig
"	I. Willets	2 rigs
"	Willets & Co.	2 rigs
Cronan,	J. McMurray & Co.	rig
E. T. & Co.,	F. W. Mitchell, No. 3	700
"	"	rig bldg
Lynch,	Lynch & McMurray	rig
Childs,	O. A. Childs & Co	rig
C. B. & H.,	Treat & Porterfield	2 rigs
"	Baum & Richardson	rig
"	Burns & Monroe	rig

Drilling	1
Rigs	17
Total,	18

COLE CREEK.

M. W. & H.	pur, W. W. Thompson	rig
"	"	rig
G. & Van V.	pur, Union Oil Co. No. 25	rig
"	" " 26	rig
Lot 399,	Forest Oil Co., No. 28	rig
399,	" 29	rig
394,	P. T. & W. C. Kennedy, No. 8	rig
394,	" 9	rig
405,	Forest Oil Co., No. 9	rig
405,	" " 10	rig
416,	Lee & Apple, No. 4	rig
416,	" " 8	rig
416,	" " 9	rig
424,	Forman & Union Oil Co., No. 20	rig
492,	Johnson & Union Oil Co., No. 38b	rig
492,	" " 39b	rig
423,	Newell & Palmer	rig
439,	J. L. McKinney & Co. No. 23	700
439,	" 24	100
Forman,	Geo. V. Forman, No. 8	1600

Rigs	17
Drilling	3
Total	20

OIL VALLEY.

Duke,	C. H. Coffin & Co	rig
Fullerton,	Angell Oil Co.	4 rigs
Angell,	"	4 rigs
"	James Smith	rig
"	Weir & Steel	rig

INDIAN CREEK.

Miles Loup,	James O'Neil, No. 10	rig
"	" " 11	rig
"	Hart & Hicks, No. 22	rig
H. Loup,	J. D. Downing & Co.	2 rigs
Pine Lot,	Evans Bros. & Co.	rig
Barse,	J. D. Downing	rig
"	Bussell & Urquhart	rig
L. Loup,	Follett Bros	3 rigs
Keyes,	Indian Creek Oil Co.	rig
Dodge,	Frank Hardwick	rig
Gale,	Curtis & Taylor, No. 6	rig
"	" " 7	rig
"	Moore & Watson	rig

FOUR MILE.

McCartney,	G. W. Funk, No. 3	rig
Donahue,	Brown & Norris	rig
Van Campen,	Geo. Van Campen, Sr.	rig
Waters,	Chas. Gellespie	rig
Shattuck,	Waco Oil Co	4 rigs
Howard,	Merrill & Perrin, No. 19	rig

KINZUA.

Bingham,	J. M. & Thos. Tait	rig

KINZUA VILLAGE.

Jamison,	Jamison & Co	rig
Chapel Fork,	Brown & Co	rig

Drilling	0
Rigs	39

ALLEGANY FIELD.

ALMA.

Lot 1,	A. Jackson	rig
2,	Morse & Hardison	2 rigs
17,	Scott & Elliott	700
17,	Lewis & Co	rig
18,	G. M. Barney	rig
18,	Mrs. O. P. Taylor.	sand
18,	"	rig
18,	O. P. Taylor	4 rigs
22-38, 39, 40,	Duke & Norton Oil Co	4 rigs
23,	Anderson & Otis	2 rigs
23,	L. S. Anderson	2 rigs
24,	Whitehill & Jones	400
38,	Snow & Co	2 rigs
51,	Nicholson & Co.	sand
54,	Durkee, Young & Co.	drilling
69,	Baker & Co.	rig
143,	Bush & Cole	700
143,	I. W. Shirley	200

Drilling	7
Rigs	21
Total	28

BOLIVAR.

Lot 5,	Star Oil Co	rig
6,	Penzer & Love	rig
14,	Carroll Bros.	rig
15,	Empire Gas Co	2 rigs
16,	"	rig
16,	Peck & Freeman	2 rigs
23,	Johnson & Conroy	rig
24,	Empire Gas Co	rig
24,	Johnson & Bartlett	500
24,	Taylor & Co	rig
51,	Ballard & Forman	rig
32,	Sawyer & Co	100
32,	Short & Son	2 rigs
32,	Manning & Co., No. 5	sand
36,	Unknown	rig bldg
37,	Moran & Klingler.	500
37,	Parker & Dunning	500
37,	Sample & Solly	rig bldg
37,	"	rig
38,	Oil Well Supply Co., No. 3	sand
38,	" " 4	rig bldg
38,	Fisher Oil Co.	700
38,	W. & A. Cochran	2 rigs
38,	Glass & Co	rig
38,	Curtis & Williams	rig
38,	Geary, Hanley & O'Shay	rig
38,	J. G. Haymaker	sand
39,	Stevens.	2 rigs
39,	Smith & Wellman	rig
39,	G. V. Forman	sand
40,	Meldrum Oil Co	rig
45,	Geo. V. Forman & Co.	200
45,	"	rig
45,	"	rig
46,	Palmer & Thyng	400
46,	Williams & Reed	rig
46,	Clark & Davis	200
62,	Book & Rhodes	rig
63,	Northrup & Co	100
64,	Thompson & Huver	2 rigs

Drilling	13
Rigs	33
Total	46

WIRT.

Lot 17,	Taylor & Humphrey, No. 6	rig
17,	" 7	rig
25,	Hazelwood Oil Co	rig
25,	"	rig
25,	Whitney & Good	rig
33,	Taylor & Allen, No. 10	500
33,	" 11	rig
33,	Wellman & Fuller	rig
33,	Knox Bros	rig
35,	Wallace & Co.	rig
41,	Coast & Rice, No. 2	sand
41,	" 3	rig
41,	Norton & Cheeseman	sand
41,	"	700
49,	Finegan, Nelson & Co.	rig
49,	Coast & Rice, No. 11	200
49,	A. A. Richardson	rig
54,	Patty & Dow	rig bldg
46,	Dr. Pitts	rig

Drilling	5
Rigs	14
Total	19

GENESEE.

Lot 7,	I. E. Dean	2 rigs
7,	McCalmont Oil Co	5 rigs
8,	Isaac Willets, No. 27	rig
8,	Bradley & Co.	700
8,	McDugal Oil Co	300
16,	Taylor, Hill & Smith	rig
16,	D. W. Canfield	rig
16,	G. S. Bussell	rig
21,	Willets & Cranston	rig
23,	M. Hughes	rig
23,	Willets & Cranston	sand
24,	"	sand
24,	Daggett Oil Co	100
24,	"	rig
24,	"	rig bldg
24,	Hammond & Barton	rig
24,	Book & Gartland	sand
24,	"	rig
24,	"	rig bldg
24,	"	rig bldg
24,	Galey Bros	250
29,	Willets & Cranston	rig
30,	Deutcher & Dix	rig

Drilling	6
Rigs	23
Total	29

CLARKSVILLE.

Lot 1,	Knox Bros. & Co., No. 1	sand
1,	" " 2	rig
9,	Meal Ticket Oil Co.	rig
10,	Smith & Gleason	700
17,	Huston & Brett	rig
17,	Duke Centre Oil Co.	rig
19,	Pratt & Fink	sand

SCIO.

Lot 2,	Morse & Hardison	rig
2,	Nameless Oil Co.	rig
2,	Wheeler & Co.	rig
3,	O. P. Taylor	sand
3,	Morrison & Lattimer	rig

Drilling,	4
Rigs,	8
Total,	12

WARREN DISTRICT.

CHERRY GROVE.

Lot 589,	Wilcox & Co.	sand
590,	Mehoopany Oil Co., No. 3	300
590,	" 4	rig
590,	" 5	rig bldg
590,	Brown Bros.	200
610,	Barnsdall Bros.	rig
610,	Armor, Hays & Roth, No. 3	1100
610,	Johnson & Rathburn	rig
610,	Munhall & Smithman	rig
611,	Forest Oil Co., No. 4	600
611,	" 3	350
611,	" 9	250
611,	" 10	100
611,	" 11	rig bldg
611,	" 12	rig bldg
612,	Fisher Bros.	600
612,	Jno. Galey	rig bldg
612,	Wilcox & Co.	100
618,	C. K. Book, No. 3	100
618,	" 4	rig

Lot 618, O'Dell & Co. 1200
618, " " 500
618, Armstrong & Speer . . . . . sand
618, Bailey & Co. 1000
618, R. Stewart, ... 1000
618, J. Galcy 100
618, J. M. Guffy 80
618, Union Oil Co. 50
619, Taylor & Huffman div. 7 . . . . . sand
619, J. H. Van Wormer div. 10 1200
619, M. Murphy div. 9 . . . . . sand
619, Zeigler & Smith div. 1 100
619, " " 2 1000
619, " "14 . . . . . sand
620, Carter & Hurd No. 3 700
620, Book & Grace div. 5 200
620, Dell Brown No. 2 800
620, " " 3 . . . . . rig
634, Waugh & Co. 1200
634, F. W. Mitchell & Co. No. 1 1600
634, " " 2 500
634, " " 3 . . . . rig
635, Carrol Bros. div. 19 . . . . . sand
635, Cedar Oil Co. div. 21 1500
635, Thompson & Andrews div. 22 . . . 1400
635, C. Miller div. 29 1300
636, Wood & Tucker div. 3 200
636, Payne & Chambers div. 4 1300
636, Cummings & Co. div. 4 1400
636, A. J. Gartland div. 5 1500
636, W. J. Innis & Co. div. 8 1000
636, J. T. Johnson div. 9 1400
636, R. Caldwell No. 11 . . . . . rig
636, Rix, Pemberton & Co. No. 15 . . . rig
636, Payne & Johnson No. 23 . . . . . rig
636, S. Comfort No. 25 800
636, " " 26 200
636, " " 26 . . . . . rig
645, Kervin & Glatzau No. 2 1000
645, Rockland Oil Co. No. 3 200
645, " " 4 . . . . . rig
645, R. J. Straight 1300
646, Union Oil Co. div. 9 1400
646, " " 11 1000
646, " " 12 1400
646, " No. 10 1200
646, " " 11 1000
646, " " 12 200
646, " " 13 100
646, Forgie Bros div. 10 . . . . . sand
646, J. W. Humphrey . . . . . rig
646, Globe Oil Co. . . . . sand
646, Grace & Goldsboro . . . . . sand
646, " 800
646, Geo. Pease No. 20 800
646, Kennedy Oil Co. No. 4 1300
646, " " 5 1000
646, " " 6 . . . . . rig
646, Forgie Bros. . . . . rig bldg
647, Anchor Oil Co. div. 5 . . . . . sand
647, " " 6 100
647, " " 7 . . . . . sand
647, " " 8 1300
647, " " 9 300
647, " " 10 100
647, " " 11 . . . . . rig
647, " " 19 . . . . . rig
647, " " 20 100
647, " " 21 1200
647, " " 22 . . . . . sand
647, " " 23 100
647, " " 35 . . . . . sand
648, Rockwell & Co. . . . . rig
648, Green & Black . . . . . rig
657, Book & Arters 1000
657, A. Shidemantle No. 2 200
657, A. P. Tanner No. 2 300
657, Cooper & Giles . . . . . sand
657, Lupher Bro's & Hackett, No. 3 . . . 600
658, Anderson Bros. & Co., fishing . . . 1400
658, Jennings & Payne, No. 2 . . . . . rig
658, Hopkins & Co 100
658, Mallory & Co 1600
658, Fitzsimmons & Co 500
658, Vandergrift & Kelly 1400
658, Briody & Barnsdall 300
658, Caldwell & Boyer 1400
658, Stewart & Wickham 1400
658, J. Markham . . . . . sand
659, I. E. Dean . . . . . rig
659, M. D. Archibald . . . . . rig
659, J. T. Johnson . . . . . rig
659, J. Ottman 200
659, Geo. Given 1100
659, Bobtail Flush Co . . . . . sand
659, " . . . . . rig bldg
659, John St. John 400
659, Wetmore & Murphy, No. 2 200
659, " 3 900
659, " 4 100
671, R. E. Green, No. 2 . . . . . sand
671, " " 3 1100
671, " " 4 . . . . . rig
671, " " 8 . . . . . sand
671, " " 9 1200
671, " " 16 1200
671, " " 17 . . . . . rig bldg
671, John McKeown, No. 2 900
672, T. Mullin, Jr., fishing 900
672, Spence & Cupler, div. 3 . . . . . sand
672, Galey Bros., div. 4 . . . . . rig bldg
672, J. R. Goldsboro, div. 8. . . . . rig
672, Greenlee & Anderson, div. 12 . . . . rig
672, Duke & Harris, div. 14 200
Lot 672, Christie & Stafford, div. 17 100
672, M. Feeley, div. 18 . . . . . rig
672, Taylor & White, div. 20 100
672, Matson & Thompson, div. 21 1600
672, Coglin & Roach, div. 23 . . . . . sand
672, Frew & Co., div. 24 700
672, Munhall & Smithman, div. 25 . . . 400
672, J. E. Butler, div. 26 . . . . . rig
672, J. H. Caldwell, div. 30 . . . . . sand
672, L. C. Stanford, div. 31 . . . . . rig
672, " " 31 . . . . . rig bldg
672, Gregg & Co., div. 34 1000
672, Ed. Mullin, div. 34 390
672, Clark & Collins, div. 35 600
672, N. F. Clark & Co., div. 36 600
673, A. A. Richardson . . . . . rig
680, John McKeown . . . . . rig bldg
680, W. F. Thompson . . . . . rig bldg
680, " . . . . . rig bldg
680, " . . . . . rig bldg
680, " . . . . . rig bldg
681, Arters & Co . . . . . rig bldg
681, Mike Murphy, No. 1 100
681, " " 2 . . . . . rig bldg
681, " " 3 . . . . . rig bldg
681, " " 4 . . . . . rig bldg
697, Hopkins & Co 150

Drilling 116
Rigs. 46

Total 162

FOREST COUNTY.

Cooper Tract, Shannon & Co. shut dowu . . sand
1393, Murphy & Co. . . . . rig
5236, Kelly & Grandon Bros. shut down . . . sand
5210, Grove, Hart & Co. . . . . sand
Watson Farm, Hancock & Co. . . . . rig
Proper, Wellcott & Co. . . . . rig bldg
J. Cornwall, est 1100

CLARENDON.

Lot 55, W. W. Beatty . . . . . rig
78, " No. 22 est 600
496, " . . . . . rig
107, Malone & Co. . . . . rig
108, Grandin & Hague . . . . . rig
108, Duke & Harris . . . . . rig
498, Crowell & Estep. . . . . rig
498, Hopewell, Payne & Co. . . . . rig
498, F. M. Pratt & Co., No. 5 . . . . rig
527, Tannery Oil Co., No. 5 . . . . . rig
528, Beaumont & Drake . . . . . rig
531, Long, Vroman & Co. 700

SHEFFIELD.

Lot 368, Magee & Horton . . . . . rig
408, Geo. Wetmore & Co . . . . . rig
212, Fruby & Co. . . . . rig
Warrant 2,735, Clark & Co. 1000
Henry's Mills, H. B. Porter, shut down . . .sand
Williamson, McKinney & Co., shut down . .sand

MISCELLANEOUS.

Russellburg, Ed. Wightman 1300
Warrant 5548, Elk t'w'p, Morck & Falconer . 700
" 3064, Ward & Hutchinson, fishing . 700
King's Hollow, Marsh & Brown . . . . . rig

Drilling 12
Rigs 17

Total 29

THE LOWER FIELD.

BALD RIDGE.

Shorts, Baldridge Oil Co. . . . . sand
Weber, " . . . . . sand
Mahood, " 500
Heckert, " . . . . . rig
Smith, " . . . . . rig bldg
" " . . . . . rig bldg
Huselton, " . . . . . rig
Hoffman, " . . . . . rig
Gruber, Forest Oil Co. & Jennings . . . . sand
Renfrew, " 200
Kaltenbaugh, " . . . . . sand
Dodds, " . . . . . rig
Pillow & Slayton, " . . . . . rig
Huselton, " . . . . . rig
Plaisted, " . . . . . rig
Dixon, Phillips Bros. 1400
McCalmont, " 1000
McJunkin, " 700
M. Crowe, " . . . . . rig
Mahood, John S. Campbell 100
Duffy, McConnell, Reiber & Johnson . . . . rig
Brown, Union Oil Co. . . . . sand
Lardin's Mills, Sharpsburg parties 700
Byrom Center, Adams & Storey 600

VENANGO.

Shiner, Mack & Williams . . . . . sand
Sayres, Wolfe & Kugler . . . . . sand
Kooney, Dale & Smullin . . . . . rig
Brown, Roess Bros. 200
G. Finchbaugh, D. Cratty 300
Sayres, Wolfe & Kugler No. 2 . . . . . rig bldg
C. Finchbaugh, Sweet & McConnell 200
——, Woolly & Laughlin . . . . . rig bldg

CLARION.

Tylersburg, O'Donnell & Co. 1400

Drilling 16
Rigs 17

Total 33

SUMMARY.

Wells Completed.

Section.	*No. of Wells.*	*Barrels.*	*Average.*	*Dry.*
East Branch, West Branch, Quintuple, Foster Brook	.	.	.	.
Kendall Creek, Oil Valley, Indian Creek, Big Shanty	.	.	.	.
Cole Creek & Bingham	13	168	.	1
Kinzua, all Dists.				
Totals	13	168	.	1
ALLEGANY FIELD.				
Alma	3	42	.	.
Bolivar	36	817	.	1
Wirt	9	195	.	.
Genesee, Clarksville, Scio	12	145	.	5
Totals	60	1,199	.	6
WARREN.				
Cherry Grove	171	23,805	.	17
Clarendon, Sheffield, Miscellaneous	4	233	.	1
Totals	175	24,038	.	18
Lower Country	3	100	.	1
Grand totals	178	24,138	.	19

SUMMARY.

Drilling Wells.

Section.	*Drill.*	*Rigs.*	*Total.*
East Branch, West Branch, Quintuple	14	24	38
Kendall Creek, Foster Brook, Cole Creek	4	34	38
Totals	18	58	76
Oil Valley, Indian Creek, Four Mile, Kinzua, Dew Drop, Cole Creek	.	39	39
Big Shanty	.	.	.
Totals	.	39	39
ALLEGANY.			
Alma, Bolivar	20	54	74
Wirt, Genesee	10	36	46
Clarksville, Scio, Miscellaneous	4	8	12
Totals	34	98	132
WARREN.			
Cherry Grove	116	46	162
Clarendon, Miscellaneous, Sheffield, Forest	12	17	29
Lower Country	16	17	33
Bradford	.	39	39
Allegany	34	98	132
Grand totals	178	217	395

STATEMENT made by the United Pipe Lines July 10th, 1880, and enlarged to August 31st, 1882. It gives gross stocks, sediment and surplus, net stocks, outstanding balances, receipts (or runs) from all sources, and total deliveries, or shipments:

	Gross Stocks.	Sediment and Surplus.	Net Stocks.	Outstanding Acceptances.	Credit Balances.	Receipts from all Sources.	Total Deliveries.
1877—April	1,895,153.71	77,386.70	1,817,767.01	449,640.14	1,368,126.87	200,570.81	125,797.90
May	1,762,602.64	75,363.87	1,687,237.77	663,663.71	1,003,574.06	493,200.58	619,612.26
June	1,596,367.68	81,255.42	1,488,112.26	661,786.57	826,325.69	538,906.95	737,609.77
July	1,482,433.51	81,741.50	1,400,692.01	667,166.36	733,625.65	615,145.46	699,476.18
August	1,489,052.53	81,144.63	1,407,907.90	643,281.46	764,626.44	673,403.04	666,144.28
September	1,339,032.27	67,163.68	1,271,868.59	552,676.26	719,192.33	625,225.37	769,745.57
October	1,434,728.78	46,771.99	1,387,956.79	673,850.05	714,106.74	687,094.59	570,092.71
November	1,691,399.52	39,418.00	1,651,981.52	657,591.36	994,390.16	913,644.19	649,242.70
December	2,830,413.36	68,729.63	2,761,685.73	754,338.25	2,007,347.48	1,656,150.37	506,332.99
1878—January	3,124,641.15	72,453.43	3,052,187.72	864,711.41	2,187,476.31	872,681.18	715,149.78
February	3,439,526.98	82,452.66	3,357,074.32	1,404,292.13	1,952,782.19	1,030,688.44	720,478.14
March	3,940,000.65	92,963.06	3,847,037.59	1,487,430.50	2,359,598.09	1,196,251.26	701,681.27
April	4,335,274.84	133,935.76	4,201,340.08	1,615,791.19	2,585,548.89	1,137,359.40	778,050.53
May	4,609,681.45	150,117.76	4,459,563.69	2,065,333.31	2,394,230.38	1,104,352.40	843,081.33
June	4,719,699.25	181,800.03	4,537,899.22	1,950,420.81	2,587,478.41	1,092,604.02	1,004,474.55
July	4,885,851.72	229,080.78	4,656,770.94	2,078,466.56	2,578,301.38	1,258,648.45	1,108,074.33
August	4,571,658.59	217,085.19	4,354,573.40	2,064,590.75	2,289,982.64	1,195,268.67	1,496,009.04
September	4,410,061.84	225,088.86	4,184,972.88	2,705,853.95	2,479,119.03	1,182,118.57	1,318,265.33
October	4,072,267.43	234,050.89	3,838,576.54	1,517,484.27	2,321,092.27	1,271,174.73	1,564,984.43
November	4,083,972.42	216,655.30	3,867,317.12	1,784,443.35	2,082,873.77	1,159,623.71	1,129,047.42
December	4,098,200.92	201,470.30	3,896,730.62	1,741,311.07	2,155,419.55	972,338.83	924,035.93
1879—January	4,759,031.41	182,707.80	4,576,323.61	2,153,763.83	2,422,559.78	1,231,237.19	546,271.74
February	5,157,646.15	171,689.80	4,985,956.35	2,346,238.22	2,639,718.13	1,055,377.95	643,828.71
March	5,503,768.71	190,797.91	5,312,970.80	2,484,861.83	2,828,088.87	1,363,512.17	1,029,029.70
April	5,885,675.24	211,957.06	5,673,718.18	2,644,301.36	3,029,416.82	1,379,349.76	1,015,482.04
May	6,180,843.53	315,992.98	5,864,850.55	2,522,846.36	3,342,364.19	1,488,514.31	2,228,043.27
June	6,426,802.45	334,457.29	6,992,345.16	2,959,921.12	3,132,424.04	1,437,250.90	1,204,557.54
July	6,419,699.08	323,295.32	6,096,403.76	2,323,575.29	2,772,828.47	1,472,651.01	1,465,518.05
August	6,380,606.63	300,345.15	6,078,261.48	3,581,224.03	2,497,037.45	1,714,620.11	1,728,940.81
September	6,589,859.83	325,363.85	6,264,995.98	3,783,480.38	2,481,015.60	1,691,863.41	1,455,811.45
October	6,701,209.87	299,393.67	6,401,816.20	3,788,155.65	2,613,660.55	1,646,725.06	1,502,991.20
November	6,951,133.67	303,641.17	6,647,492.50	3,927,300.18	2,675,192.32	1,600,961.29	1,328,621.19
December	7,362,409.76	294,571.37	7,067,838.39	4,235,459.40	2,832,378.99	1,771,781.24	1,331,822.12
1880—January	7,735,257.38	295,517.60	7,439,739.78	4,436,788.55	3,002,951.25	1,832,963.04	1,145,194.98
February	8,187,012.49	322,568.93	7,864,443.56	4,602,286.49	3,262,157.07	1,607,663.89	1,178,111.92
March	8,621,097.49	351,130.35	8,969,967.14	4,811,894.33	3,458,072.81	1,815,133.31	1,396,037.88
April	9,662,354.59	388,558.16	9,273,766.43	5,846,536.60	3,427,259.83	1,739,297.37	723,794.73
May	10,306,078.79	454,193.73	9,851,885.06	6,361,320.05	3,490,565.01	1,552,240.91	975,061.26
June	11,266,771.77	477,431.60	10,789,340.08	7,397,131.89	3,392,208.19	1,781,937.29	848,339.08
July	12,039,010.00	475,446.56	11,563,563.44	8,125,241.25	3,438,332.19	1,890,161.44	1,095,528.25
August	12,749,623.28	462,987.28	12,286,636.00	8,635,394.80	4,651,241.20	1,904,452.70	1,177,448.42
September	13,618,276.03	382,398.71	13,236,327.32	9,287,193.94	3,949,133.38	2,075,105.26	1,115,184.71
October	14,020,877.32	391,331.55	13,629,545.84	9,448,615.77	4,180,930.07	1,999,487.98	1,598,285.06
November	14,656,891.55	341,262.67	14,315,628.88	10,038,824.08	4,231,804.80	1,859,991.50	1,064,146.39
December	15,369,758.67	361,184.83	15,008,573.48	10,913,283.49	4,095,290.35	1,987,283.54	1,207,928.35
1881—January	16,291,307.87	360,688.98	15,930,618.89	11,672,583.61	4,258,035.28	1,876,526.50	931,818.71
February	17,355,485.31	391,616.47	16,936,868.84	12,029,594.35	4,934,274.49	1,823,713.46	781,745.93
March	18,488,476.94	432,304.19	18,056,172.75	13,099,262.44	4,956,910.31	2,222,812.39	1,116,695.11
April	19,560,752.23	517,422.38	19,043,329.85	13,846,285.20	5,197,044.65	2,182,636.96	1,183,779.02
May	20,591,177.33	640,662.03	19,950,455.30	14,608,124.70	5,342,330.60	2,278,582.78	1,356,688.23
June	21,397,698.53	756,412.85	20,641,285.68	14,738,828.77	5,902,456.91	2,318,445.18	1,545,448.13
July	21,982,161.42	774,402.94	21,207,758.48	15,150,267.23	6,057,131.25	2,396,472.50	1,756,044.15
August	22,474,105.51	800,343.43	21,673,762.18	15,240,553.15	6,433,209.03	2,527,888.69	2,013,844.67
September	22,727,740.61	820,434.43	21,907,306.18	15,626,283.11	6,281,023.07	2,233,085.37	1,900,251.83
October	23,212,951.99	801,243.43	22,431,708.56	16,408,030.46	6,023,678.10	2,452,428.66	1,803,052.62
November	23,303,782.34	746,980.08	22,556,744.26	16,407,354.48	6,149,389.78	1,995,895.38	1,742,462.86
December	23,862,966.20	775,000.00	23,087,966.20	16,496,380.40	6,234,291.37	2,255,252.50	1,696,068.64
1882—January	24,243,382.26	762,111.53	23,481,270.73	17,788,245.97	5,693,024.76	1,984,325.23	1,547,945.23
February	24,704,933.81	765,000.00	23,939,933.81	18,541,340.52	5,831,402.36	2,062,742.98	1,601,191.43
March	25,663,298.81	887,210.88	24,776,087.93	19,039,760.73	5,736,327.20	2,305,538.30	1,453,354.46
April	26,519,252.22	993,150.92	25,526,101.30	19,963,183.00	5,562,918.30	2,145,965.63	1,381,093.10
May	27,518,619.53	1161,789.36	26,356,830.17	20,622,520.38	5,734,309.79	2,339,170.39	1,496,566.23
June	28,311,328.53	1344,852.60	26,966,475.93	21,282,495.62	5,683,980.31	2,419,934.81	1,796,712.55
July	28,955,781.79	1330,493.28	27,625,288.51	22,037,273.31	5,588,015.20	2,599,606.49	1,982,695.57
August	30,198,208.64	1370,660.62	28,827,548.02	22,094,815.90	6,732,732.10	3,176,053.39	1,870,745.07

MOUNT & KUGLER, who run a machine shop at Oil City, completed a well south of that city on the 1st inst. that started producing at the rate of 200 or 300 barrels per diem. The well is located in the midst of a number of dry holes which were sunk in the latitude years ago. It caused great excitement in Oil City, being only 6 miles distant. The inhabitants of the Cranbury hills, of the township of that name, are greatly exercised over the strike.

RUNS, DELIVERIES, STOCKS.

TABLE showing the July and August Pipe Line Runs and shipments, with stocks, on August 31st, 1882—official. Each barrel 42 gallons:

District.	Receipts, Pipe.	Barrels, July.	Barrels, August.
Bradford	United	. . . . .	. . . . .
Tidioute & Titus'e,	"	. . . . .	. . . . .
Lower Country	"	. . . . .	. . . . .
Monongahela	"	. . . . .	. . . . .
Total	"	2,599,606.49	3,176,053.39
Bradford	Tidewater	262,399.60	258,861.37
Warren	Union Oil Co.	77,364.26	. . . . .
Titusville	Octave Oil Co.	4,394.71	3,817.21
Oil City	Charley Run	372.98	436.71
Shaffer	Shaffer Run	560.00	618.00
Franklin	Franklin Pipe	6,257.55	8,169.17
Total all Lines		2,950,955.59	3,447,955.85
Average per day, August			111,243.38
Average per day, July			95,192.11
Average per day, June			95,522.95
Average per day, May			85,563.70
Average per day, April			80,093.98
Average per day, March			83,724.96
Average per day, February			83,547.40
Average per day, January			71,855.35

Deliveries.

District.	Pipe.	Barrels.	Barrels.
All Points	United	1,982,695.71	1,870,745.07
Warren	Union Oil Co.	41,010.46	. . . . .
Titusville	Octave Pet. Co.	3,699.40	4,612.04
Franklin	Franklin Pipe	2,865.72	5,223.71
Shaffer	Shaffer Run	351.60	0,315.08
Oil City	Charley Run	303.67	0,361.56
Bradford	Tidewater	173,553.43	166,187.23
Total deliveries		2,204,479.99	2,047,444.69
Am't of Runs in excess of Shipm'ts, August		746,475.60	1,400,511.16

District.	Pipe.	*Net Stocks July 31.* Barrels.	*Net Stocks August 31.* Barrels.
Oil City	Charley Run	3,692.46	3,756.25
Bradford	Tidewater	2,271,419.78	2,362,267.83
All Districts	United	27,625,288.51	28,827,548.02
Shaffer	Shaffer Run	26,545.53	26,815.25
Warren	Union Oil Co.	199,829.42	. . . . .
Titusville	Octave Oil Co	10,701.43	10,171.73
Franklin	Franklin Pipe	19,544.07	22,489.53
Total August			31,253,047.61
Total July			30,157,021.20
Total June			29,540,517.47
Total May			28,833,715.51
Total April			27,969,884.48
Total March			27,252,806.93
Total February			26,414,274.36
Total January			25,788,071.79
Increase August			1,096,026.41
Increase July			616,503.73
Increase June			706,801.96
Increase May			863,631.03
Increase April			717,077.55
Increase March			838,532.57
Average increase per day, August			35,355.69
Average increase per day, July			19,887.21
Average increase per day, June			23,560.15
Average increase per day, May			27,859.06
Average increase per day, April			23,902.58
Average increase per day, March			27,049.44
Average increase per day, February			22,364.00
Average increase per day, January			12,174.73

THE McCALMONT STORAGE CO.

IT is certainly with feelings of pride and gratification that the trade greets the new enterprise known by the above title. The fact that this organization has completed arrangements, and has actually commenced the business of transporting oil from the wells in the Cherry Grove district to the seaboard and elsewhere, is a strong indication that the end of railroad manipulation, by large corporations and influential individuals, has approached. The shipping interests of an industry are similar to those of a nation; if they are permitted to decline in favor of a few by or through neglect of the power that controls them, they soon loose their hold on the mind of the business public. It has been so for the past ten years in the oil business. When the great trunk lines were open to all comers in the matter of shipping oil, channels for the erection of prosperous business houses were open in every important city of the country. The railroads, however, lost sight of the public good in the rampant chase of their managers for individual gain. Thus, competition in this important branch came suddenly to a halt. But time makes changes, and on the 15th of August, last, we find a new enterprise fully equipped for the handling of 10,000 barrels of oil a day, and actually receiving the guarantee of the railroads that it shall be protected in its work. This is a move in the right direction; but it is doubtless owing more to force of circumstances on the part of the railroads than anything else. Seaboard pipe lines have become somewhat numerous, and entirely too monotonous for the roads, and they seem,—when perhaps, it is too late,—to be inclined to open their highways to all who may feel disposed to engage. Success to the McCalmont Storage Co., with its transporting capacity for 10,000 a day. The purpose of the company is stated in the proclamation it makes through the advertising columns of the AGE.

DEATH OF A PROMINENT OILMAN.

MR. L. F. FREEMAN died at his home in Olean on Monday night, the 11th inst., of typhoid fever. His death has caused a feeling of sorrow to spread over the entire oil-producing community, as Mr. Freeman was a man who won the respect of all with whom he came in contact. He leaves a wife and one son, 12 years old, to mourn his departure, and great is the loss to them. Mr. Freeman was 43 years old, and was born at Franklinville, N. Y. Being of an active temperament and rather speculative turn, he engaged in

the development of oil almost at the very beginning of the movement, and, through varied phases of fortune, followed the business till his death. In the northern fields, at the outbreak of the excitement, in company with Mr. L. G. Peck, large tracts of land were leased and otherwise secured throughout McKean County, Pa., and Cattaraugus County, N. Y., by which a large fortune fell to them. Their last move was in the Allegany field, where some slight losses were entailed. But Mr. Freeman lived a life of purity, and possessed qualities of the rarest integrity and worth. He was a member of the Baptist Church for a quarter of a century, and was held in the highest esteem by the society. It is well to speak of the death of such a man, notwithstanding it causes pain and regret so to do. He has laid down the armor and rests, and, though dead, yet lives in the life of the community, where he was known, for the good thereof.

BRADFORD'S OPPORTUNITY.

AS the N. Y., L. E. & W. R. R. is shortly to change the course of its main line to the great West, thus bringing Bradford in direct communication with the world toward the rising as well as setting sun, it strikes us as the opportune moment for this great oil metropolis. Its advantages as a manufacturing centre will not only be made perfect, but it will be considered one of the important points in America at which tourists from all parts of the world must make a halt, at least. Courage should be taken by the citizens; "coming events cast their shadows," and it requires a very limited degree of foresight to discover some of the benefits that are in store for this city. Its streets should be paved where paving is necessary, its walks and driveways should be made inviting, and its parks, public and private, should be at once trimmed and made as beautiful as possible. The curse of Bradford has been the inordinate and foolish disposition to itinerancy of the inhabitants. Many of them have been prophesying of its downfall and total abandonment for the past two years, and yet in the face of the foolish utterances of these false teachers, the place has continued to enlarge and improve. This is right. Bradford is yet the centre of the great producing region. It is Bradford—as it has been for five years—that is yet supplying the great bulk of the oil produced, and, together with Allegany, which hereafter will be tributary to Bradford, will continue so to do. It is one of the finest railroad centres in the country, and even with her petroleum supplies cut off should still continue to be a city of great importance midway between the great East and the greater West. Therefore, let the citizens awake and seize the present as the proper time to make preparations for a future of great success in the business relations of the city. The desire to emigrate should be abandoned, as no better point at which to dwell could be found within the limits of the "oil track," at least. It is a pleasure to know that this feeling is rapidly gaining control of the inhabitants. Nothing is more disastrous to communities as well as individuals, in a financial sense, than this restless itching to go somewhere else in search of fortune and a home. Both are here, if we only thought so.

THE ALLEGANY FIELD.

TABLE SHOWING THE PROGRESS OF DEVELOPMENTS AND PRODUCTION OF THE ALLEGANY (N. Y.) FIELD.

Month.	No. of wells completed.	Dry.	Production, bbls., of new wells.	Average per well.	Average daily Production of Field, Bbls.	Drilling.	Rigs.	Stocks in wooden tanks. Bbls.	Stocks in Iron tanks. Bbls.
Total, 1880	8	42	76	9½	76	4	6	. . .	. . .
Jan'y, '81,	4	2	18	9	94	4	5	. . .	. . .
February	4	1	24	6	112	4	8	. . .	. . .
March .	5	2	60	12	162	4	7	. . .	. . .
April . .	3	1	20	10	170	5	6	. . .	. . .
May . .	4	1	48	12	212	20	21	. . .	. . .
June . .	14	8	130	9¼	327	24	35	. . .	. . .
July . .	22	5	275	12½	588	47	57	. . .	. . .
August .	53	17	586	11	1080	62	68	. . .	. . .
September	63	11	910	14½	1740	105	118	. . .	. . .
October .	96	5	1432	15	2896	164	198	38000	108891
November	154	10	2732	17½	5180	155	200	84666	142216
December	196	2	5115	26 1/10	8937	187	204	180200	169250
Jan. 31, '82,	162	2	3914	24 1/6	11123	191	209	270860	243147
Feb. 28th	189	4	4154	21.97	13200	212	201	373460	258247
March 31st	216	2	5580	25.83	16000	215	221	374490	359347
April 30th	257	6	6356	24¾	20760	226	230	400000	417347
May . .	265	7	5992	22⅜	22438	179	191	440000	542347
June . .	163	11	3605	12	22220	94	153	475000	650000
July . . .	81	. .	1488	18½	19391	45	123	375000	550000
August .	60	6	1199	20	17650	34	98	295927	550000

THE Cherry Grove pool does not form a 45° belt after all. Several of the boys who followed it closely got badly left. The correct course to pursue in that field is a 35°. This brings the line in close proximity to the Grandin Well at Balltown.

M. HULINGS, Esq., has 15,000 acres of land leased on Duck Creek, in southeastern Ohio. He has one well on the property doing about 10 barrels a day, and is of the opinion that, when oil advances a dollar or so on a barrel, he can open a large oil field there.

BAD POLICY.

A Correspondent's Views.

To the Editor of the Age:

Sir,—I find the following paragraph in the *Oil and Paint Review:*

"In what other trade of this or any country may be seen such a situation as that which has been compelled in the petroleum trade? Who may explain the conduct of a man who, desirous of making his investment most profitable, still works day and night to depreciate the value of the very thing in which he has invested? No one would expect a man to put his money in corn, or in cotton, or in any of the great commodities of the country, or in the production or growing of any of them, and then to see him deliberately pursue a course of action the only result of which could be loss and, ultimately, ruin. Such a policy, however, men inaugurated in the petroleum trade a few years ago, and, persisting in it, have brought the profits of that trade to a point but a slight remove from absolute loss. The suicidal nature of such a policy has been pointed out to them time after time, but all to no purpose. The humiliation of an industry which should be at the head of all American industries, not only in commercial extent, but in financial return, has been made almost complete by this hap-hazard, irregular, unregulated system of business. A necessity to millions of people, petroleum goes begging for a market, and asks to be bought at any price. Every report from foreign countries is to the effect that the stock of petroleum and petroleum products abroad were never so large as now. The hundreds of brimful, immense iron tanks in the Oil Regions, and the constant construction of others to receive the increasing surplusage of crude oil, tell a story whose moral will come home to many with a vengeance before the trade is many months older. Oil is running to waste from scores of tanks at wells, and still the drill is kept on its way to bring thousands of barrels more to the surface daily. Worse, still, the wild adherents of this destructive policy are not content with present petroleum development, but are searching here, there, and everywhere for new fields. The daily production of petroleum is now not less than 100,000 barrels. At the very outside 60,000 barrels will supply all demand. Yet the men who are responsible for the depression and demoralization in the trade are loud in their expressions of wonder and indignation that oil should not command a better price."

Now, while this contains solid truth in one part, it certainly misstates, misrepresents, or willfully uses false figures in order to hit a hard blow upon the head of the producing fraternity. Nothing is truer than that the policy of the producers for the past few years has been the reverse of sensible, wise or good. It must, therefore, have been the contrary—bad. Those of the Allegany field drilled wells with a vengeance that seemed wretched and wicked, and pounded the price of oil, meanwhile, until there was the poorest picking left for producers elsewhere, and by no means profitable for themselves. Firms and individuals who should have bored with a gimlet, so to speak, used the largest augur they could find. In other words, ten or a dozen wells were drilled by them, all at the same time, when one or two should have satisfied them, and perhaps accorded more harmoniously with their capital. The result of this recklessness is seen in the fact that when the Cherry Grove calamity befell the trade, and the value of real estate, oil, and oil property of every description was depreciated, many of them were unable to stand the pressure, and were forced to make assignments. Others were forced to sell their property for what they could realize in order to keep their heads above water. All this the result of a bad policy. If producers had drilled according to their means during the past five years, and the foolish system of credits had not been adopted by the supply trade, the world would not to-day be suffering with an overdose of the element of light. All a result of bad policy. But, while all that the first paragraph states in this regard is true, and all we have just stated, and all that could be said on the same subject is and would be true, yet it is not necessary to use an argument that has no foundation in fact, in order to clinch the nail of the original statement. The production is not 100,000 barrels a day, as given in the first place, and, in the second, a child of an oilman, six years old, who does not know that more than 60,000 barrels a day is and will be required for the needs of the trade this year, ought to be punished for neglect to study its simplest lesson. Everybody knows if the consumption was exactly 60,000, more than ten other thousands would be required to grease the wheels for future advance in the same. So, while the consumption is much nearer 70,000 than 60,000, as stated by the *Review*—which is usually well-read in oil matters—it must require hereafter about 80,000 or 82,000 barrels per day to fill orders for future use.

MUCH ADO ABOUT NOTHING.

To the Editor of the Age:

Sir,—We have no means of knowing just why the great tragedian and comedian became so thoroughly acquainted with folks who have transmitted their peculiar peculiarities so perfectly to the generations which have succeeded them. We are well aware, however, that we have those in every branch of business, as well as every society and household, who are more or less gifted with the faculty of making a fuss about small things. Some people are naturally panicky, and are easily sent off the handle at all hours of the day or night. The oil business is by no means exempt from this class either. On the contrary, it seems to possess a superabundance of such. The striking of a well of unusual capacity in an old field is sometimes sufficient alone to cause a commotion in the breasts of some, as in the case of the well in Cranbury Township, Venango County, for instance. Here is a county known for the past fifteen years to contain oil in greater or less quantities, and is at the present time well punched with holes of the usual oil-well diameter. Some small wells have been pumping in the neighborhood for over six years, and the fact that a well or two have been obtained recently of more than ordinary value, should not turn the heads of all connected with the business. Doubtless there are a great many such spots yet to be drilled in very close proximity to old producing wells, and for this cause it may be assumed that many of the old towns of Oildom, that have long since passed in their checks, and taken passage for eternal doom, may be again brushed up and considerably revived, and in a few instances restored to former greatness. But the point at issue relates to the making of a fuss without inquiring as to the magnitude of the matter. Only last month a well was completed near Tarport, about a stone's throw of the oldest wells in the region, which started off producing at a greater capacity than anything that preceded it. The oil exchanges heard nothing and knew nothing of it. On Toad Hollow, only a short distance from the old Emery Well, the first drilled in the Hollow, a well was completed during July, that flowed like a genuine Cherry Grove spouter, and nobody but the owners knew anything of it. But poor Oil City must go into tantrums over the striking of a twenty-five-barrel well, within six miles of its outer gates. The striking of such a well is, in fact, nothing when the people get used to it. It is the wild-cat in the "forest" that is to be feared—the genuine *schreecher*, whose gush is heard from Dan to Beersheba, and from Pennsylvania to Hong Kong. It is hoped, therefore, that the trade will look upon such ventures with the allowance that they demand. They are harmless. It is not the new well in the old territory that is to be feared, but rather the new well in the purely virgin locality.

THE OIL CITY OIL EXCITEMENT.

(Regular Correspondence of the Age.)

OIL CITY, Sept. 10th.—The bug-bear of old Cranbury township, six miles south and a little east of the city, has had its day in the market and has been scooped. The two wells completed about the 1st inst., and reported all over the country as good for at least half a thousand a day, have settled to their work, and are now, Sept. 10th, scoring 40 or 50 bbls. a day apiece, which, to say the least, is a big thing for that quarter of the universe. The territory is among the very oldest drilled in this section of the country, only that the limited area upon which the Kugler and the Williams Wells above referred to escaped the march of the early developers. Spots of the character developed by these wells have been found at various intervals all around it. North of it a few miles the McGrew Bros. as early as 1873 opened a small pool which repaid them for losses sustained in wild-catting in other parts of the country, to the amount of $200,000. A short distance east and south of the Cranbury strikes can be seen the ruins of the Kezmilton development, which caused a big stir in 1869, and which proved of such moderate proportions as to cause the shedding of financial tears to a host of operators who had laid out a line extending in a southwesterly direction to Foster Station, on the Allegheny Valley R. R. and river. The line cut short one fine morning and there was a scramble to get out as quickly as possible. All that can be said for the new excitement is that it has served to create in the minds of the people hereabouts a feeling that they still have some sources of supply that may prove of more or less valne to them, in the way of restoring lost prestige to the community, as the proper oil centre of the world. This, however, is a small potato for the whole army of Oil City and Franklin to feed upon, in the face of the immense crop of the Northern fields together with Warren and Forest Counties. In estimating the possibilities of the future, therefore, Cranbury must not be taken as a very important factor.

A new town, entitled Egypt, has been started,

and is being rapidly shaped into a veritable "city" of the oil species. How far it will extend is a matter for the future, but it would not be surprising to witness a large influx, as there are hosts of the portable classes residing in the communities above named, who have been very anxious for "just such a time as this" to occur. It is a God-send to those who have been unable to emigrate to the upper country with their "little all" in search of employment, and a chance to speculate on small margins. During the present month a few more wells may reach the sand and it is not improbable that they will respond favorably. The course taken by nearly all new ventures is to the southwest, and just how far the spur may continue remains to be proven.

CONGLOMERATE.

A PIPE line now connects the Ohio and West Virginia oil districts.

OUR Oil City correspondent does not seem to think highly of the Cranbury field.

TWENTY-TWO torpedoes have been exploded in Cherry Grove wells in a single day.

D. T. SEELEY, who has supplied oil towns in the gun line, displays his business, and good sense, in this AGE.

THE Pipe Lines are to be credited with speedy work in preparing for the large and rapid increase in the production of Cherry Grove during August.

WITHIN 60 days it is very probable a person will be able to board a narrow gauge railroad at Richburg, N. Y., or Wellsville, and alight at Butler, Pa.

IN last month's statement of production by fields in the situation article, the statement of 4000 barrels outside, referred to Clarion and Butler Counties alone.

A CORRESPONDENT elsewhere jumps on to the oil editor of the *Oil and Paint Review* for statements which he claims are wrongfully and unjustly made.

CHERRY GROVE'S yield reached the altitude about the 1st of the month, or a few days previous, of nearly 40,000 barrels for one day. This was its highest point, and it is presumed that it has fallen off 15,000 since that time.

AT the general lighthouse depot, on Staten Island, Capt. Geo. N. Brown has introduced a process for steaming oil barrels. It is claimed that the steaming process draws all the rancid oil from the staves, and the residuum readily sells for 25c. a gallon, or its equivalent in prime oil.

THE business that will not survive under the protection of the petroleum industry is not a good one. Even the fine arts flourish very successfully. And the furnishers of fine apparel are very successful. Miss E. J. Dickenson resorts to the AGE to make known her ability to cope with the wants of the higher classes, all of whom patronize her, as well as take the magazine.

THE Chester Oil Co. takes advantage of the superior qualifications of the AGE as a medium for reaching the eye of the oil trade generally. The company talks to the public on the title-page in this issue. The Chester Oil Co. is composed of some of the most substantial men of the trade, and is engaged in the manufacture of an article of refined oil inferior to none on this or any other continent. The trade of the company is largely with foreign dealers, but home dealers, realizing the great value of the oil, are making heavy demands for it.

SPARKS from a locomotive set fire the other night to the Bee Line's oil sheds at Cleveland, Ohio. The 300 barrels of refined petroleum stored there burned furiously, and flowed all about in blazing streams, consuming a saloon and a boarding house near by, and firing a train of 15 cars loaded with petroleum, which were burned, together with 10 other freight cars, which were empty. The burning oil ran down the catch basin into the sewer, flowed under Scranton Avenue into the river, a distance of several hundred feet, and set fire to the schooner James Wade, which was damaged $300. The total loss is estimated at $30,000.

THE *Oil and Paint Review* says: The late Samuel Willis Hawes, of New-York and Buffalo, at one time transacted a large business on the lakes and canals, adding to it the importation of oil from his native town of New Bedford, and supplying the lighthouses on the lakes under contract from the government. When Chicago was a mere hamlet, the crude oil was brought in huge hogsheads in sloops to Albany, where it was manufactured and shipped to Buffalo on sailing vessels for the Western lakes. Mr. Hawes has been styled the "father of the oil trade in the West," being the first, if not the only, manufacturer of sperm oil and spermaceti candles; and when whales grew scarce in the Arctic regions, adding to his business that of lard oil and candles. He sunk the first shaft in the oil lands in Enniskillen, Canada, in 1859, and when petroleum was developed in Pennsylvania he became one of the most extensive and prosperous manufacturers of that product.

SHIPMENTS.

Shipment of Crude and Refined, in Barrels of 42 Gallons each, reduced to Crude Equivalent out of the Producing Regions in the years named:

Year.	January.	February.	March.	April.	May.	June.	July.	August.	September.	October.	November.	December.	Totals.
1859	. . . . .	. . . . .	. . . . .	. . . . .	. . . . .	. . . . .	. . . . .	. . . . .	. . . . .	. . . . .	500	1,200	1,700
1860	900	1,200	2,500	4,640	11,000	21,000	58,500	64,300	79,000	78,400	63,400	38,400	423,240
1861	54,800	49,620	68,410	95,300	184,000	189,000	200,400	210,000	263,000	184,000	76,321	75,282	1,650,133
1862	98,212	93,101	103,762	201,430	256,320	385,211	375,440	376,311	401,210	406,500	213,611	190,463	3,141,521
1863	171,132	104,928	148,388	288,994	456,211	428,282	213,413	281,400	398,211	264,441	281,340	206,211	3,242,951
1864	148,324	101,431	96,486	132,486	125,218	221,386	110,490	101,218	228,430	220,386	201,441	154,765	1,842,001
1865	121,386	94,803	103,201	122,222	140,301	338,403	184,231	115,821	231,402	228,321	215,262	204,779	2,100,132
1866	132,200	121,320	180,206	260,231	280,320	390,260	200,410	290,210	390,431	318,616	210,016	236,701	3,010,921
1867	123,460	115,321	165,230	250,830	300,210	360,311	210,410	260,310	384,206	300,102	280,013	132,807	2,883,210
1868	150,220	144,201	200,410	280,430	310,408	400,046	390,402	320,210	480,306	260,240	280,260	265,377	3,482,510
1869	200,026	160,320	240,210	260,406	340,318	400,601	310,260	250,214	450,200	480,860	280,210	249,896	3,623,521
1870	360,933	312,910	354,400	390,003	407,908	418,516	410,707	516,679	542,217	557,624	519,780	444,254	5,235,931
1871	437,691	347,718	383,890	389,147	587,375	501,754	541,137	528,134	551,075	505,071	480,977	410,822	5,664,791
1872	476,966	407,606	276,220	428,512	510,417	529,228	591,238	621,954	541,607	607,468	477,940	430,786	5,899,942
1873	573,124	527,440	668,374	708,191	768,176	696,414	814,449	864,768	952,955	1,010,852	959,589	955,443	9,499,775
1874	843,663	501,220	518,246	803,409	899,027	815,413	940,281	793,865	1,014,570	543,341	546,117	602,348	8,821,500
1875	435,095	327,776	693,918	729,581	681,679	745,986	904,537	882,089	1,109,392	871,917	671,066	871,902	8,924,938
1876	677,289	519,193	623,762	603,037	646,150	921,862	1,228,530	1,203,402	1,154,549	524,190	871,496	1,190,983	10,164,443
1877	743,461	484,904	913,919	903,526	1,234,324	1,391,124	1,096,951	1,425,943	1,563,797	1,268,971	1,205,634	600,019	12,832,578
1878	775,791	774,234	741,512	846,636	960,894	1,135,119	1,330,454	1,655,651	1,434,225	1,747,390	1,281,410	992,688	13,476,000
1879	663,998	702,729	973,879	1,136,188	1,331,469	1,369,314	1,625,035	1,808,238	1,627,120	1,662,269	1,453,645	1,542,585	15,896,469
1880	1,650,409	1,395,151	1,613,371	842,268	1,095,259	975,083	1,231,611	1,304,129	1,252,635	1,665,933	1,226,030	1,335,613	15,587,447
1881	1,061,617	915,028	1,276,740	1,348,398	1,563,436	1,729,697	1,925,532	2,214,877	2,031,950	2,080,467	2,069,641	2,014,655	20,232,038
1882	1,817,973	1,829,779	1,729,237	1,751,294	1,843,455	2,261,172	2,239,591	2,078,903	. . . . .	. . . . .	. . . . .	. . . . .	. . . . .
. . . . .	. . . . .	. . . . .	. . . . .	. . . . .	. . . . .	. . . . .	. . . . .	. . . . .	. . . . .	. . . . .	. . . . .	. . . . .	. . . . .

Oil and Mineral Deposits at Mendoza, South America.—A correspondent residing at Mendoza, the capital of the province of the same name of the Argentine Confederation, calls attention to the promising deposits of minerals and mineral oil in that little known region. Mendoza lies close to the Chilian frontier at the foot of the Andes, in latitude 33° south, longitude 69° west. It is soon to be brought into closer communication with the coast and rest of the world by the nearly completed Andean Railway. The mineral deposits close to the city are described as immensely valuable, yet almost entirely neglected. The opening up of steam communication will make the region, our correspondent thinks, an exceedingly promising one for investment and enterprise.

The petroleum deposits are found at the foot of the first spurs of the Andes, on an open plain, about ten leagues southwest from Mendoza, at a place called La Sierra de Cacheuta. Some of the oil collected on the surface of the ground showed on analysis:

Volatile combustible matter,	91.66
Fixed carbon,	7.24
Ash,	1.10

As all the kerosene used in the republic is imported from the United States, it is believed that a refinery at Mendoza would find it easy to command the large home market, and be able also to export largely to the adjoining republics of Chili, Peru, Bolivia, etc., and to the Brazilian Empire. The price of kerosene at Mendoza is $5 a can.

In the immediate vicinity of the oil springs precious metals are found in considerable quantities, and a large amount of silver is extracted in a desultory sort of way from a mine close at hand.

The climate of the region is temperate and salubrious, and allows the production in perfection of all European grains and fruits.

AUGUST OFFICIAL QUOTATIONS FOR CRUDE.

THE following table shows opening, highest, lowest, and closing quotations at the Oil Exchange each day, and average for the month :

	Opening.	Highest.	Lowest.	Closing.	Avg.
1	60¾	61¼	59⅝	61	60⅝
2	60½	60⅞	59¾	59⅞	60¼
3	59¾	59¾	59	59	59⅜
4	58¾	60⅞	58¾	60¼	59¾
5	60⅜	61¼	59⅞	60½	60¼
7	60¼	61	59⅝	59⅞	60¼
8	59⅞	60	59½	59¾	59¾
9	59⅞	61¼	59⅞	60⅞	60¾
10	61	61⅜	60¾	61⅛	61
11	61	61	60¼	60¼	61⅛
15	60⅛	60¾	60¼	60⅜	60½
14	60¼	60¾	59½	59¾	60⅝
15	59⅞	59⅞	58¾	58¾	59¼
16	58¾	59⅜	58¾	59¼	59⅛
17	59⅜	59½	59¼	59¼	59⅛
18	59¼	59½	59	59	59¼
19	59¼	59⅜	58¼	58⅜	58½
21	58⅜	58⅜	57¼	57⅜	57⅞
22	57⅜	57⅜	56⅞	56⅞	57⅛
23	56⅞	57⅜	56⅜	56¾	57
24	56⅜	57½	56⅜	57¼	57
25	56¾	56¾	54⅜	55	55½
26	55	55⅜	54⅜	54⅞	55
28	55	56½	55	56¼	55¾
29	56¼	57½	56¼	57⅛	57
30	57	57¼	56½	56½	56⅞
31	56⅜	56⅝	55⅛	56	55⅞
Average for Month,					58¾

AUGUST OFFICIAL QUOTATIONS FOR REFINED.

THIS table gives the daily quotations for refined oil at the principal foreign as well as domestic ports :

August.	N. Y. cts.	Philadelphia. cts.	Baltimore. cts.	Antwerp. fr'c.	Bremen. m'rk.	London. pence.
1	6¾	6⅜	6⅜	17¼	6.70	5⅝
2	6¾	6⅝	6⅝	17¼	6.70	5⅝
3	7	6⅝	6⅝	17¼	6.70	5⅝
4	7	6⅞	6⅞	17½	6.85	5½
5	6¾	6⅝	6⅝	17¼	6.70	5⅝
7	7	6⅞	6⅞	17½	6.70	5⅝
8	6¾	6⅝	6⅝	17¼	6.70	5⅝
9	7	6⅞	6⅞	17¾	6.85	5½
10	7	6⅞	6⅞	17¾	6.85	5½
11	7	6⅞	6⅞	17⅞	6.85	5⅝
12	6¾	6⅝	6⅝	17¼	6.70	5⅝
14	7	6⅝	6⅝	17⅞	6.85	5⅝
15	7	6⅝	6⅝	17⅞	6.85	5⅝
16	6⅞	6⅝	6⅝	17⅞	6.85	5⅝
17	6¾	6⅝	6⅝	17⅞	6.85	5⅝
18	6⅞	6⅝	6⅝	17⅞	6.85	5⅝
19	6⅞	6¾	6¾	17¾	6.80	5½
21	6⅞	6¾	6¾	17¾	6.75	5½
22	6⅞	6¾	6¾	17¾	6.75	5½
23	6¾	6¾	6¾	17¾	6.70	5½
24	6⅞	6¾	6¾	17¾	6.70	5½
25	6⅞	6¾	6¾	17¾	6.70	5½
26	6⅞	6¾	6¾	17¾	6.70	5½
28	6⅞	6¾	6⅜	17½	6.75	5½
29	6⅞	6⅞	6⅞	17½	6.75	5⅜
30	7	6⅞	6⅞	17½	6.75	5⅜
31	7	6⅜	6⅞	17½	6.75	5⅜

WELLS COMPLETED.

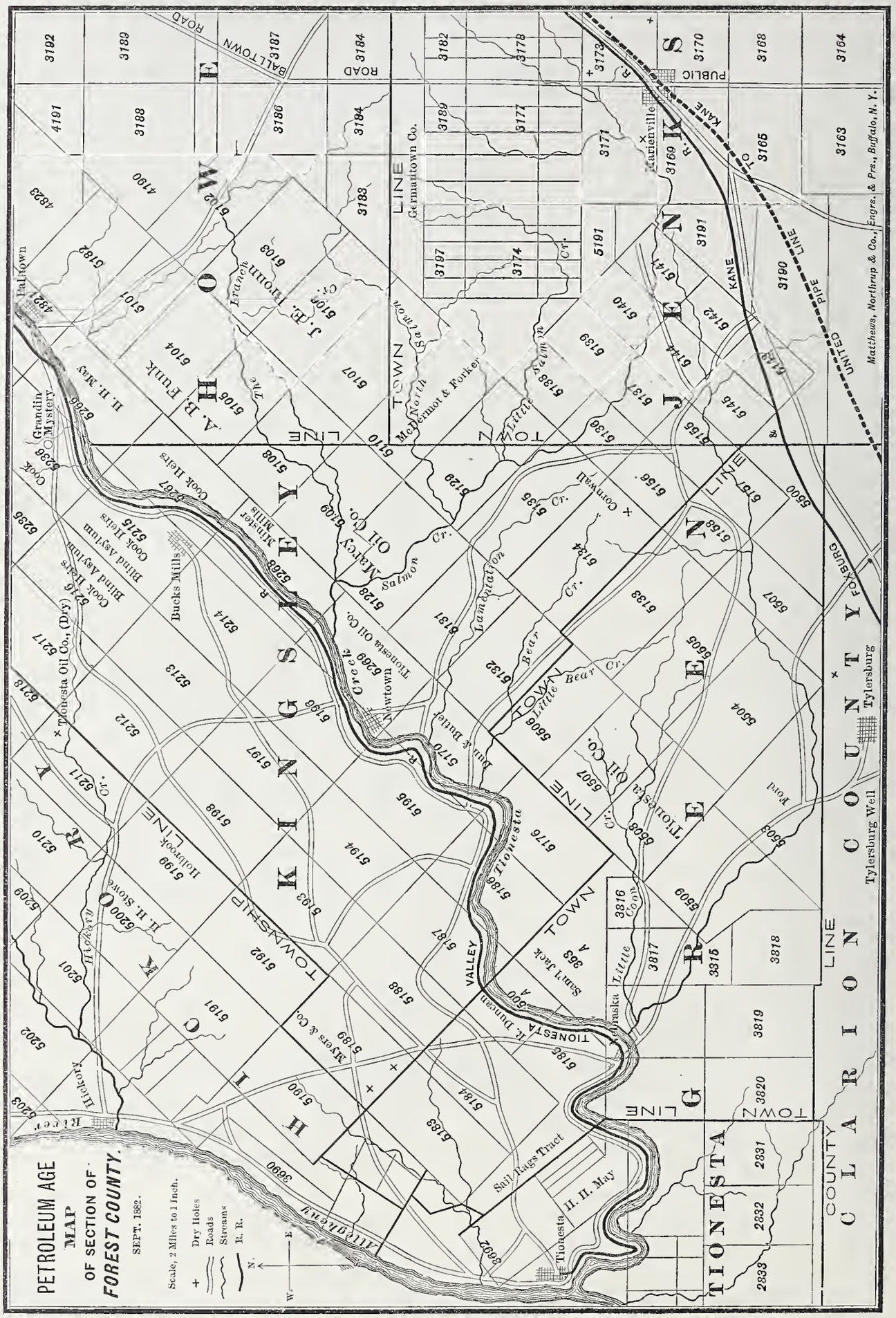
TOTAL NUMBER WELLS COMPLETED EACH MONTH IN THE YEARS AND MONTHS NAMED.

A. D.	Jan.	Feb.	March.	April.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.	Total.
1870	131	131	114	135	164	182	161	156	135	144	112	79	1,644
1871	98	68	70	81	95	150	139	116	125	186	161	181	1,470
1872	48	118	98	122	130	98	131	117	96	101	41	101	1,201
1873	100	105	105	110	106	180	112	116	116	111	108	95	1,364
1874	108	111	108	110	112	113	124	102	108	117	112	116	1,341
1875	184	186	194	180	169	194	208	206	208	215	213	228	2,385
1876	235	236	248	207	200	258	243	274	223	270	278	271	2,943
1877	275	249	296	264	336	598	314	254	332	460	398	391	4,167
1878	279	238	202	411	468	278	210	180	176	232	241	160	3,075
1879	144	136	221	263	395	336	335	280	269	229	225	268	3,101
1880	311	238	358	494	435	315	339	359	359	360	334	309	4,211
1881	232	218	201	310	412	371	348	335	314	302	347	405	3,795
1882	357	359	389	449	457	328	188	248					

THE CRUDE OIL MARKET IN CANADA.

THE situation in the crude oil market at Petrolia, Ont., is thus summed up by the *Petroleum Advertiser*, under date of August 24: "The market here for crude oil, by the car load, is from $1.40 to $1.50 per barrel f. o. b., but this quotation is only nominal, and few transactions are taking place, and the producers are holding their oil and refuse to sell at the reduction. The trade is very quiet at this time of the year and there is not much business doing. The price obtainable for the crude oil or warehouse receipts issued by the different pipe line companies, at Petrolia, Ont., including the pipage charges of from 2c. to 5c. per barrel, according to the distance of the producer's well from the shipping tanks at the railway, is $1.40 in tank, but the views of buyer and seller are too far apart to give any definite quotation this week and there is very little business doing."

THE newspapers of the country have been giving a Boston oil company considerable cheap advertizing of late. The company proposes drilling for grease in Mexico, and it commenced blowing about it six months in advance. What a fuss about nothing, anyhow!


PETROLEUM AGE
MAP
OF SECTION OF
FOREST COUNTY.
SEPT. 1882.
Scale, 2 Miles to 1 Inch.
Dry Holes
Roads
Streams
R. R.
TOWNSHIP
TOWN LINE
Germantown Co.
Matthews, Northrup & Co., Engrs. & Prs., Buffalo, N. Y.
Tylersburg
Tylersburg Well
Tionesta
Tionesta Oil Co.
Bucks Mills
Lawtown
Cook Heirs
Cook Asylum
Blind Asylum
Mayer Mills
Grandin Mystery
Pal Town
Kane
Corienville
Foxburg
Clarion County
Tionesta Township
Salt Bags Tract
Sand Jack
Little Bear Cr.
Salmon Cr.
Lamentation
Valley
Allegheny River
Clarion River
Hickory
Holbrook Line
Germantown Line
United Pipe Line
Public Road
Ballstown Road
Kane to Foxburg
A. B. Funk
J. B. Thorn
H. H. May
H. H. Stowe
Myers & Co.
McDermott & Forker
Conwell
Burk & Butler
Tionesta Oil Co.
Cook Heirs
Blind Asylum
Tionesta R. Duncan
Nebraska
Little
Coon
Cr.
Run

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THE PETROLEUM AGE.

VOL. I. BRADFORD, PA., OCTOBER, 1882. NO. 11.

PETROLEUM.

CHAPTER XI.

The Fagundas Development — A Boom for Tidioute — Various Outside Developments — New Zealand — Shale Trade of Foreign Countries — Peculiar Arrangement for Exhausting Water — "Thompson's Theory" — Demand of 1870 — Number of Wells Completed, etc., etc.

DURING the summer and fall of 1869, operations progressed northward from the head waters of west Hickory Creek until it became a settled fact in the mind of those who had been induced to anchor some cash in the vicinity that a field of some magnitude was opening to the gaze of the petroleum world. The sand rock was of the soft series — rather dark, but porous and pebbly. The oil, also, was of the dark species, being a counterpart as to color of that produced at Pleasantville. The area of productive territory, however, was extremely limited, but some portions were very rich, the wells starting in some instances at from 300 to 400 barrels per day. This gave rise to a severe struggle for possession of the lands, the titles to which, in numerous instances, had been seriously neglected. In no part of the world, perhaps, were titles permitted to pass down in so imperfect a condition as in the Oil Regions. This transpires through the utter worthlessness of much of the land for any other than mineral purposes after the pine timber was removed, which had been done years before the oil excitement. Whole blocks, containing more than a 1,000 acres each, were permitted to be sold for taxes in some of the most forsaken deserts, the owners having stripped them of what they considered of all their value — the pine timber. In many other cases tracts containing several hundred acres each, were never patented by those in possession, their squatting title being all that they supposed they required. This led the way for those who had familiarized themselves with the true condition of affairs, to cause trouble in many a camp. Legal contests became alarmingly numerous, and not a few who had presumed that they were secure in their right of title were forced to yield all to the fortunate schemer who had applied the State rule to the proceedings. In one case, Gen. Allen, of Warren, detected an undescribed piece of land stretching across the oil belt on the Triumph hillside, and applied for a patent. This was granted, and although the land was supposed to belong, properly, to a larger block adjoining on the east, and owned by Grandin and others, became Mr. Allen's by right, and made him rich through its yield of oil. The imperfect surveys — which were made soon after the settlement of the country — were more frequently discovered in Warren and Forest Counties, however, than in any other part of the region.

VARIOUS OUTSIDE DEVELOPMENTS.

The petroleum industry of Pennsylvania began at this time to be thoroughly known, throughout the civilized world, by the men of science and the leaders in commercial pursuits. It was no longer looked upon as a business of a transient character. It had now passed a decade of years from its birth, and with the outlook, in regard to supply, was by no means a sickly urchin. No sooner did one district or field become exhausted, than another seemed to spring into appearance, and, very frequently, at some point of the compass least thought of or expected. Surprises, such as Pithole, have been constant attendants upon the trade from its inception. They are irregular in their visits, however, and are always accompanied by fortunes for some and bankruptcy for others, in accord with the relative standing of each upon the question of future supply and demand. There were those who always looked forward to a season of dearth or famine in oil supply, and shaped their affairs to that end. On the other hand, there were others who possessed a more advanced view, and looked forward to the development of larger resources than the country had yet witnessed. It is, therefore, quite easy to determine which of these two classes would be the most liable to be prepared for the appearance of any new development, with its corresponding depression of prices.

During the fall of 1869 the desire to open new fields had spread far beyond the Pennsylvania Oil Region. Wherever traces of the liquid — or even gas — had been discovered, the fever to "bore for oil" became again quite epidemic. Especially was this so in the Kentucky and West Virginia regions; and from reports which came

north from these, it began to be considered as one of the certain results of future operations that a large quantity of oil would be produced there. A large number of wells were drilled, or preparations made for the same, during the season. In some of these oil was found, but the inconveniences of transportation so effected the business that, instead of its being pursued as at the outstart in Pennsylvania, the works were nearly all abandoned. As late, moreover, as 1870, the system of drilling in vogue possessed all the characteristics of the most primitive periods. The derricks used were of the rudest pattern, and were only from thirty to forty feet in heighth, instead of seventy-two feet, as in Pennsylvania. The sand-rock here obtained thus far is not of prime texture, being mixed or interlaid with slate and shells. It is possible that at some future time, as the experienced drillers of the north move southward, something of more value than anything yet developed may be discovered. The Barron County deposit has so far furnished the greater portion of Kentucky's oil. A record of a well drilled there has been furnished the AGE by a gentleman experienced in the production of oil in the field. It is as follows: Below surface of the ground, on stream-bed, two feet of hard soil and sandy; thirty-two feet white limestone, forty-three feet shale; sixty-four feet limestone, twenty-five feet of sand, shelly and mixed with slate — sand, white color. In this same season — fall of 1869 — an attempt was made to capture an oil deposit in

NEW ZEALAND.

Traces of oil were discovered in the vicinity of Taranaki, where there was an exhalation of gas, accompanied by bubbles of bituminous matter. On close observation and analysis it was decreed that this "matter" was none other than petroleum. Two companies were formed at once for the purpose of testing the territory, named respectively the Taranaki and the Alpha. The first sunk two wells and the latter one. These wells were located about half-a-mile from high-water mark between the main land and Moturoa — the highest of the Sugarloaf Islands. Dieffenbach, in speaking of this substance, states that it "was whimsically attributed by the Maoris to the decomposition of an Atua, or spirit, who was drowned there." At 250 feet a stratum of tufa (volcanic deposit), mixed with iron and charged with oil, was found, which was the only evidence of the existence of petroleum discovered in the first well. In October the Taranaki Company's well, No. 2, located on the north headland, and a short distance from the sea level, was drilled to 145 feet, in which ten feet of sandstone was found, and but slight traces of oil. The Alpha Company drilled its test to 180 feet in the same section. A shaft was sunk some sixty feet, penetrating the agglomerate. From the sides of this shaft, at the depth of about fifty feet, oil in small quantity oozed, and when the well was permitted to stand at rest for a period of a few days, some oil collected on the surface of the water in the well, and a small quantity of gas also escaped. Perhaps, all told, the well pumped, during the years of 1869 and 1870, 500 barrels of oil. On a chemical examination of this oil, one hundred parts, having a specific gravity of .963, gave:

Distilled oil of specific gravity,	.874	.02
" " " "	.893	.01
" " " "	.917	.08
" " " "	.941	.60
Solid bitumen,		.06.1
Fixed carbon,		.12.4
Ash,		.01.5
		100.00

This partial success led to further explorations, resulting similarly to those above described. Of later years' operations mention may be made at a future time; but they are, in any event, uninteresting.

THE SHALE OIL BUSINESS.

Up to the year 1870, and even later, the Shale oil works of Europe were still doing an immense business. The annual report of the "Shale oil trade" of Scotland for that year showed that about 800,000 tons of shale were put into retorts, and the probable yield of crude oil from this source would be 25,000,000 gallons. It required 475,000 tons of fuel to produce this result. From this amount of crude about 400,000 barrels of refined or burning oil were manufactured. The annual commercial value of this business to Scotland was about $1,270,000 — there being about fifty manufactories. There were also works in England, France, and Germany, and Spain, at Constantinople, in Italy and Australia. To the ton of shale placed in the retort about 150 gallons of crude were extracted. Works were, about this time, established in Ireland also, with a view of extracting oil from the peat so plentiful there, but the increase in the production of the American petroleum soon put a damper on the business, and instead of its enlarging it began to fade before the year 1871 had closed.

THE OIL FIELDS.

During the summer and fall of 1869 the old fields north of Oil City had become quite thoroughly drilled. This had the effect of driving many operators to the new district surrounding Parker's Landing, on the Allegheny River, eighty miles south of Oil City. The post-office was called Lawrenceburg at the time, from the village of that name situated on the bluff just west of the Landing. It at one time was quite an important trading point in iron, as there were a number of large blast furnaces in the immediate vicinity. But, as stated on a former occasion, some oil was found on the flats at the Landing in a couple of wells that had been sunk by some of the old inhabitants, aided by James E. Brown, a wealthy citizen of Kittanning, Pa. James M. Lambing, a man of much experience in drilling wells in the upper fields, was one of the first to venture in other tests in the latitude, and was rewarded by a ten-barrel well, near the mouth of Tom's Run, a small stream joining the Allegheny River, half-a-mile north of the Landing. This led to the speedy drilling of others, and before the close of the year there were, perhaps, thirty wells producing, and all located within a radius of three-fourths of a mile from the Landing. The average yield of these was about fifteen barrels per diem, to each well, and the tendency, as operations progressed westwardly, was toward improvement. As a consequence, the volume was very quickly increased. The sand, or oil rock, was of the usual thickness for white-sand territory — from fifteen to thirty feet — and was of good quality. The idea of a belt, extending to the southwest or the northeast from the Landing, had not yet dawned upon the minds of the operators, but it was only a question of a very short time for this to occur. A well was commenced and completed sometime in the early part of the year 1870, on the island in the river, midway between the Landing and Foxburg, which proved that there was at least a connection between the Landing section and the Fox estate, upon which were situated a few small producing wells. Nobody knew at this time — or even dreamed — of the immense stores of petroleum that lay hidden beneath the surface of Clarion County at the northeast, and Butler County at the southwest. On this belt were some of the finest farms for agricultural purposes to be seen anywhere. The inhabitants were happy in attending their flocks, and following their general pursuits, and considered the prospects of obtaining oil as very dubious indeed. When oil was talked of, it was usually as a product belonging exclusively to the Oil Creek country. Of course, the fever of excitement which swept over the region during the years 1864 and 1865 took some effect even in Clarion and Butler. It soon became exhausted, however, and the idea of boring for oil was not considered as sensible by the old residenters. Gradually, however, the "string" became elongated either way from the Landing, and of the results that followed more will be said at the proper time.

SIGNS OF DECAY.

Along the valley of Oil Creek, from Titusville to Rouseville, there were innumerable evidences, in the beginning of 1870, of a decaying business. A trip through the district at that time was very similar to a tour of some fading empire, whose greatness and glory had become almost entirely matters of history. Dilapidated derricks dotted the valleys and hillsides, and appeared to be — and in many cases actually were — deserted. The transformation in the very short space of five years was remarkable. In some instances efforts were being made to resuscitate the old wells, by pumping the salt water to exhaustion. V. M. Thompson, of Erie, squandered a large amount of money in this vain endeavor. He had held it to be among the possibilities to exhaust the salt and fresh water that had flooded the entire area of sand-rock, by pumping a dozen or more wells on a certain space of territory steadily. These wells were so connected by a system of pulleys and wire belts, that one boiler and engine furnished the steam power for the whole number. The contrivance was unique, and moderate in expense withal as compared with the older method of pumping each well by separate and distinct connections. The scheme failed, however, and the works were abandoned, and remained for years afterwards as relics of "Thompson's theory of water exhaustion."

A fresh pool about this time began to be developed on the hillside, southeast of Rouseville. This deposit included the Shaw and other farms adjoining, though the first was the most productive. It was of minor importance, however, as an oil centre, though it resulted in the development of numerous spots in the vicinity of Oil City that produced considerable oil. Of these Cottage Hill, at Oil City, Reno and Milton, might be named. The latter appeared to be the terminus of the Reno belt at the south, though, after leaving the Allegheny River, it expanded some-

what, making a pool of sufficient capacity to cause a tremendous excitement at Milton in 1871. In the spring of 1870 a few wells were drilled in the vicinity of Eagle Rock, ten miles up the river from Oil City, in some of which oil was found, but in limited quantity.

Notwithstanding the apparent scarcity of territory upon which to drill, there were completed during the year 1870, 1,661 wells, whose average production at the end of the year was about ten barrels each. The total production for the same period was about 5,300,000 barrels, at an average price of $3.90. The shipments from the Region exceeded those of the previous year 1,600,000 barrels, a little over forty per cent. of an increase. This gave rise to a healthy advance in prices, which were maintained throughout nearly the whole of 1871. The country was in a prosperous condition at the close of 1870, perhaps as much so as at any previous date. Producers who applied their energies toward the production of oil in comparatively safe territory were rewarded, in marketable ratio, with abundant success. At Tidioute, the belt was extended westward from Triumph Hill to the Henderson Farm, then owned by E. E. Clapp, Esq., who had procured a seventy-five-barrel well, about sixty rods, from a duster sunk on the same farm in 1865, by the Oil Creek & Gordon Run Petroleum Co. The result of Clapp's well was a big rush for possession of lands and leases in the advance, and very many changed hands. Clapp's venture proved of great value to him, as the farm cost him less than $15,000, and produced, in five years from the date of his first well, over half-a-million dollars' worth of oil. At Enterprise, also, a limited excitement ruled for a short season, but was of little importance. Thus we find the Oil Country at the beginning of 1871. About this time, also, it began to be considered, by the large refining interests of Cleveland and New-York, as a matter promising of good results, to organize for the protection of the refining and shipping trade. It required nearly one year to perfect the scheme, however, and when completed it was known as the "South Improvement Co.," and was composed of all the heavy oil manufacturers of Cleveland and New-York, as well as all the heads of the great trunk lines, which removed the product from the Oil Region.

(TO BE CONTINUED.)

THE gallery men of the Oil Exchanges sometimes look on while they lose money at the rate of a dollar a second. Sometimes it is made likewise.

DEPARTMENT OF SCIENCE.

THE KEELEY MOTOR—A CHEAP RAILWAY—INTERESTING POINTS.

THE KEELEY MOTOR STILL A MYSTERY.—Not long ago the Keeley Motor Company, of Philadelphia, made application to the proper court for an injunction to compel John W. Keeley to apply for letters patent for his alleged discovery of a new motive power and the new machinery needed in its application. The company had spent nearly $150,000 to enable him to carry on his experiments, though he had refused to divulge his secret to the members of it, and had also refused to apply for a patent, claiming that in the then undeveloped form of his discovery, the probable accessory inventions and patents of others, if his secret were known, would so cripple his hold upon what he had already discovered, that it would be of little or no value to him. After retaining his alleged secret for three or four years, Mr. Keeley could hardly have been surprised to learn that the company which took stock in it began to look upon him as a fraud, and tried to make him apply for a patent. Pending that case, however, it was agreed between Mr. Keeley and the company that he should impart the secret to a William Boekel, who should report upon the advisability of applying for the patent as requested. His report, just made, says that Mr. Keeley has discovered a new motive power, peculiar to itself, differing essentially from compressed air and other gases, and requiring special machinery for its proper utilization; and says that Mr. Keeley has not yet made sufficient progress to make it expedient to apply for letters patent at this time. Knowing nothing about William Boekel, one is strongly inclined to regard this as a swindle, but perhaps it is not. It is hoped that a long and honorable fame awaits Mr. Keeley. —*Manufacturer and Industrial Gazette.*

A CHEAP RAILWAY.—There is now at work an interesting miniature railway—five miles in length—which unites the village of Westerstede in East Frisia with the station of Ocholt, on the Oldenburg and Seer line. It is solely due to the enterprise of the thinly-scattered population of the district, and carries their cattle and other produce to market, bringing them back their few requirements. The soil is marshy, so that a good deal of drainage work had to be done, and it was necessary to carry the line above the level of the frequent floods. In spite of this, the cost of construction was only £2,103 7s. 6d. per mile; and the cost of working (including wages, fuel, and

every expense) amounts to the magnificent total of £1 7s. 6d. per diem. The buildings consist of a shed at each end of the line; the terminus is the courtyard of the principal inn at Westerstede, and the single station—half way along the line—is the house of a gentleman, who hospitably entertains the passengers while they are waiting for the train. The rolling stock comprises two small four-wheeled tank locomotives, weighing (when in working order) seven and a half tons each; three carriages of the American type, with a door at each end; two open goods trucks and two covered. A train consists of the engine and two vehicles between which the guard sits. There are no turn-tables, so that the locomotive is at the hinder end of the train in returning. The fuel employed is turf, which is abundant in the district. The receipts of this tiny railway are steadily increasing.

THE OLDEST NEWSPAPER.—The *Scientific American* states that the oldest newspaper in the world is the *King-Pau*, or "Capital Sheet," published in Pekin. It first appeared A. D. 911, but was irregular in its issues until 1351. Since then it has been published weekly until the 4th day of June last, when, by order of the reigning emperor, it was converted into a daily, with three editions, morning, midday and evening. The first edition appears early and is printed on yellow paper. This issue is called *Hsing-Pau* ("Business Sheet"), and contains trade prices, exchange quotations, and all manner of commercial intelligence. Its circulation is a little over 8,000. The second edition, which comes out during the forenoon, also printed upon yellow paper, is devoted to official announcements, fashionable intelligence and general news. Besides its ancient title of *King-Pau*, it owns another designation, that of *Shuen-Pau*, or "Official Sheet." The third edition appears late in the afternoon, is printed on red paper, and bears the name of *Tilani-Pau* ("Country Sheet"). It consists of extracts from the earliest editions and is largely subscribed for in the Provinces. All three issues of the *King-Pau* are edited by six members of the Han-Lin Academy of Science, appointed and salaried by the Chinese State. The total number of copies printed daily varies between 13,000 and 14,000.

EMBALMING.—Experiments have been made at the New-York morgue to test a process by which it is claimed dead bodies, though badly swollen and decomposed, can be restored to something like a natural appearance, and preserved so that it will be recognizable after months of burial. The subject operated upon was the corpse of an unknown woman who had died from erysipelas. It was soft, black and blue, and out of all human proportions. An incision was made in the right leg and an embalming fluid, of which petroleum was an ingredient, injected into the femoral artery. In less than half an hour the body assumed its natural size, became harder than in life, and as the degree of hardness increased the discoloration disappeared, leaving it of a marble whiteness. The body of a man, operated upon seven weeks before, had been kept unburied without decomposition. It retained a natural appearance, and was without odor.

THE NATIONAL GEOLOGICAL SURVEY.—Hitherto the surveys conducted by United States geologists have been confined to the Territories. Last winter Congress authorized the prosecution of such work at national expense within the lines of the States. Accordingly parties are now at work in North Carolina, Kentucky, Missouri and Arkansas, under the direction of the Chief of the National Survey, Professor Powell, obtaining data for a geological map of the entire country. Meantime the territorial surveys are not neglected, Professor Powell going to join the large party at work in Arizona and New Mexico. The Bureau of Ethnology has several parties at work in the Mississippi Valley.

EXTRAORDINARY FOOTPRINTS.—The *Virginia City Chronicle* says that Professor Le Conte recently visited the State prison quarry at Carson, where fossil footprints were discovered not long ago. A stream of water was introduced on the quarry floor, at the western side, where the walls are about 30 feet high, and was rewarded by more than a dozen new footprints. Coming west are the prints of the feet of a man who was apparently dragging a heavy load after him through the mud. The traces are turned sideways, as if the man had sought the strongest purchase to pull along behind him his load. On the east side of the quarry a little tunnel was run in about six feet in the presence of Professor Le Conte, and three fresh human footprints were disclosed. Evidently the owner of the feet was plunging through deep and thick mud, for around each track was forced up a ridge several inches in height.

THE Khedive has rescinded the order promulgated at the outbreak of the war prohibiting the importation to Alexandria of coal or petroleum. What a mercy!

PETROLEUM AND GAS.

THIS subject has heretofore been treated at great length by the AGE. Beyond doubt much good comes from the agitation of the question, as there is nothing written that is not read by many who have not previously considered the subject in its proper light. Petroleum gas should not only illuminate all the smaller cities of the country, but it should supply a much better and cheaper fuel, while crude can be purchased under one fifty or two dollars a barrel. For proof of this we refer to Capt. Butler's letters to the AGE in April and May last. During the past year some important strides have been made in the direction desired. Not only are innumerable towns and cities of our own country applying the article to the uses named, but the whole world seems wide awake to the same idea. In Europe the raw product is made to serve the purpose, and has substituted gas in lighting even street lamps. The following letter, dated at Carter Lane, England, and addressed to the *Oil and Colorman's Journal*, is of interest:

"*Sir*,—Several paragraphs have appeared in the daily papers respecting a novel experiment in street lighting at Wimbledon, the novelty being the substitution of petroleum for gas. Allow me to state the experiment has been tried and has succeeded in many places—for instance Winchester and Barking—a better light at less cost being the result. Considering Winchester has about 20,000 inhabitants, and Barking and district also has a large population, while the part of Wimbledon to be lighted does not contain anything near so many, I venture to think they will not be left in "the outer darkness," simply because, like many other people (for a different reason) they have had the gas cut off. Had petroleum been as well known thirty years ago as now, gas would not have become the giant monopoly it is; and had electric lighting not become its future rival, lighting by petroleum would have come to the front."

Of course its cheapness will have much to do with its increased use in this or any other manner. It is not necessary, however, that half a dollar a barrel should be the ruling price. It will be only when crude commands from $1.50 to $2.00 a barrel that there will occur any serious check to this system of consumption. Scranton, a city located in the midst of Pennsylvania's greatest coal beds, is illuminated by petroleum gas. Cities of the south and west are preparing by the score for its adoption, and here in the Oil Country there does not seem to exist sufficient energy among producers of or speculators in oil to procure its introduction as a heater, even in the face of the fact that every city of the region is oppressed by a most unscrupulous and grasping gas monopoly. Petroleum gas could have been manufactured for the past two years right here in Bradford, in competition to the Natural Gas Co., with first-class financial results, not only to shareholders in such enterprise, but also to the oppressed consumers. The price of oil now, or even after it shall have ascended a much more elevated scale, should be no bar to the speedy erection of gas works in the Cities of Bradford, Olean, Titusville, Oil City, Franklin, Meadville and Pittsburgh.

The use of petroleum, as a generator of gas for heating purposes on railroads, has been the subject of much discussion for years. Recently a trial was made on the Grazi Tsaritsin Railway, in Southeast Russia. The first experiment made on this road was in 1874, when petroleum commanded a very high price in Russia, and the undevelopment of a proper appliance for its combustion at the time prevented that degree of success that otherwise would have been obtained. Oil became cheaper, however, and new inventions have appeared for its use in this respect. One of these is particularly worthy of note. It is an invention of Messrs. Balukevitch & Vaislaff, of St. Petersburg, and has been used since March last. A correspondent states that during the four months' continual trial with the apparatus, many alterations were made, and new ideas suggested, and finally they could take trains of thirty loaded cars at ordinary time-table speeds (twenty versts per hour) over any part of the main line, the maximum grades being 0.008 or 1 in 125; the trains would be between 380 tons and 450 English tons gross, engine and tender excluded. The consumption per verst with these trains was, with that consumed in lighting up, 1.04 poods, or 41.6 lbs. Russian.

CALIFORNIA OIL.

A CORRECTION.

EDITOR PETROLEUM AGE:

Dear Sir,—In your August number there is a clipping from a San Francisco commercial paper which would give your readers an erroneous impression in regard to the probabilities of California furnishing a market for Eastern or Pennsylvania petroleum. The article referred to gives the receipts of California oil for six months as

1,502,380 gallons, while the imports of Eastern oil for the same period are stated as being only 168,860 gallons. I have not the data at hand to verify or contradict a statement as to the receipts of California oil, but do know, positively, that the receipts of Pennsylvania oil, for the year 1881, were a trifle over 4,000,000 gallons, and without question, that year's receipts were much larger than those for any previous year. The year 1882 will show a slight increase of imports over 1881, and though, undoubtedly, the California production is slowly increasing, it does not keep pace with the increased consumption, as a large percentage is devoted to the manufacture of gas, and quite a portion is used as fuel; so that Pennsylvania petroleum is likely to find a market on the Pacific coast, the demands of which will be as great for many years to come as they have been in the past.

THE NEW RECRUIT.

EXPERIENCE OF A TENDERFOOT IN THE OIL EXCHANGE.

"That's quite a racket."

Thus spoke a member of the oil exchange, after reading the article in yesterday's *Blizzard* regarding the new member. He addressed his conversation to a *Blizzard* man, who asked him if the article in question did not present the matter in about the right light.

"That's what it does," continued the oilman. "I've been there and know. By the way, did I ever tell you about my experience?"

"No, you never did; let's have it."

"Well, you know I was employed as a delivery clerk for some time before I joined the exchange."

"Yes, and probably you learned the business quite thoroughly before becoming a full fledged member, did you not?"

"I thought I did, but you can't most always sometimes tell what you know about a thing until you try it."

"That's true, on general principles; but give us your experience."

"Not for publication!"

"No, merely as a guarantee of good faith."

"Well, one day shortly after I joined the exchange, my employer remarked that he wished I would get in around the ring and buy and sell a little, just to get my hand in, so I could work orders in case he should be away. I told him he need have no fears on that score. I could work an order as well as anybody."

"What did he say?"

"He said nothing, only grinned as though there was a chance for an argument about that. Well, that very afternoon he came to me and said he'd got to go up to the depot, to see some friends off on a train, and that he was expecting an order by telegraph. If it came while he was gone he wanted me to work it."

"What did you do?"

"Why, I told him that would be all right, but even then I commenced hoping the order would not come. He had, however, no more than left the room when a telegram came to buy twenty-five at a certain price. There were numerous offerings at the price designated, but I felt incompetent and did not know what to do. I read the message carefully, then jammed it down in my pants' pocket and commenced trying to whistle. I walked around the ring, in a dazed kind of a manner and it seemed to me every man I met knew I had that order. The offerings continued and the market was weakening, but somehow it did not occur to me to buy the oil. Then I went into the wash-room, washed my hands, took a drink of water and combed my hair. I felt all the time as if I was about to explode."

"Why didn't you buy the oil?"

"I don't know why I didn't. I seemed for the time being to be completely incapacitated. But after a while I managed to get up on the platform. It seemed as if every man in the room was watching me intently. I felt pale and dizzy and after standing there a minute stepped down and asked Mr. Siverly what he thought of the outlook. Then, without waiting to hear his answer, I walked over to the visitors' register, scanned the names closely, then strolled in through the smoking room, stopped at the cigar-lighter and tried to light a pencil which I had in my mouth. When I discovered my mistake I was more embarrassed than ever. I concluded to take another drink of water, and while in the wash-room took a look in the mirror, brushed up my hair and then took out the message and read it once more."

"Well, what next?"

"I then resolved to work the order or die, and for that purpose returned to the ring. The market was steady, but the offerings at the price at which I was instructed to buy were still numerous. I mounted the platform and the blood all left me again. I tried to speak but could not. I mustered all my courage, drew a long breath and said 'wh-e-e-w!' When I tried to lift my hand I was powerless to do so. I tried to open my

mouth and after a time succeeded, but having got it open I could not close it to save my life. I feared I might have the lock-jaw. I trembled all over and finally stepped down from the ring."

"You seem to have been getting along swimmingly."

"Yes, my head was getting along swimmingly. I felt as if I would die if I didn't get out in the open air."

"What did you do next?"

"Why, I went to one of the brokers, handed him the message and asked him in the name of God and the commonwealth of Pennsylvania, to work it. He got the oil in no time and I reported to the purchaser. Just then my employer returned. Noticing my rattled appearance he asked what was the matter. I told him I had been having a hard time working an order. He asked me if I succeeded in filling it and I assured him I did. After a while he came around, and, having seen the party who bought the oil for me, said: 'Yes, you filled that order, you did, nicely.'"

"Well, that was quite an experience."

"I should say so, and what makes it all the more embarrassing is the fact that it was a put up job. My employer sent the order himself, and from the gallery watched me work it."—*Blizzard.*

FUTURE PROSPECTS OF PETROLEUM.

ACCORDING to the view of the *Oil Paint and Drug Reporter*, the sudden collapse of the Cherry Grove field verifies the prediction that the profits would be confined to a small number of the early operators, while those who paid heavy bonus-money and large royalties for small lots would find that they had made an injudicious investment. The opening of the new field has added a few thousands to the fortunes of a dozen individuals, while it has caused the producer and speculative purchaser to lose several millions by shrinkage of value in stocks and current production.

If the charges for carrying oil were reasonable, those who have confidence in the future demand for petroleum being equal to the supply would have carried the stocks over the Cherry Grove spurt, and the certificates would not have been used as a stock for betting on margins.

As a ground for confidence in the ultimate prevalence of remunerative prices for petroleum, there are two classes of facts to be taken into consideration. During the last three years, in which the production has gained so largely upon the consumption, processes of drilling have been brought to a point beyond which there is not much room for improvement; the economical management of pumping wells has also reached the lowest possible point; the best possible results to be obtained from the use of nitro-glycerine have also been demonstrated. The limits in depth below the surface at which deposits of petroleum may be found and worked have been very nearly attained, so the possibility of a large and rapid increase of production now depends upon the single factor of an extension of productive area laterally. While the factors which have led to a surplus production have already been taken advantage of to the fullest extent, those which led to an increased consumption are rapidly increasing in number. In addition to the different methods of burning illuminating oils, the different processes of making gas from naphtha for cities, and the introduction of gasoline machines for private residences, have added largely to the consumption for lighting purposes. Petroleum stoves, gasoline vapor stoves, and other appliances for burning oil in the household, are fast gaining favor for summer use, and in hot climates. The use of petroleum and its products as a fuel for glass-making, smelting, and generating steam, is passing from the domain of experiment into that of practical use. The superiority of naphtha gas as a generator of power in the Otto gas engine adds another use which will grow as the efficiency of this form of engine is recognized. In addition to the above are the almost innumerable uses of the heavier products of petroleum as constituents of lubricating compounds, oils for the treatment of wools, leather, etc., for bleaching compounds, ointments, cosmetics, and perfumes. All of these applications of petroleum to new uses are in their infancy, and are sure to have a large and rapid growth, which will not be materially checked by an advance of one hundred per cent. on the present price of crude. Such considerations as the above, we believe, justify the payment of a reasonable storage charge on the present surplus stock, with the belief that the increased demand caused by the new uses to which petroleum is being applied will eventually raise the price to a point which will more than cover the cost of such storage and the current rate of interest on the investment.

CHERRY GROVE is in a very dilapidated condition judging from the tone of the correspondence elsewhere in this AGE.

FOREIGN OIL DEPARTMENT.

The Bremen Petroleum Exchange—Storage of Explosives—Oil of Southern Russia.

(Oil and Colorman's Journal.)

THE committee of this body (the incorporation of which we lately reported) has been occupied in discussing with the Antwerp, Rotterdam, Hamburg and Strettin Petroleum Associations the most efficient measure for a uniform basis by which purchases of petroleum from the United States might be regulated. It is suggested that deliveries from American dealers should not be allowed to contain oil which would give off inflammable vapors at a temperature of less than 69° Fahrenheit. The certificates on this point of the Bremen Petroleum Exchange would be founded on the Abel test. The costs of the testing of petroleum, it has been recommended, should be borne by the sellers. It is expected that the importance of Bremen as a point of import for petroleum will be augmented by the establishment of the new organization. Inland purchasers will doubtless not fail to appreciate the efforts which it has begun to make in their interest.

THE STORAGE OF EXPLOSIVE AND INFLAMMABLE SUBSTANCES.—The Breslau Chamber of Commerce has lately presented a report to the police officials of the Silesian capital, in which the suggestion is made that the trade in refined petroleum stands in need of much less stringent regulations than the commerce in explosive chemicals and other substances of a kindred nature. In support of this assertion, it is urged that refined petroleum as now received from America is no more dangerous than a vegetable oil, and the opinion is expressed that there is no risk in storing quantities of a ton to a ton and a quarter in weight in cellars where no dangerous chemical substances are placed.

Amongst the measures which the Chamber of Commerce thinks applicable to the petroleum trade is a provision for sufficient room being allowed in the storage of petroleum for the firemen to have moderate freedom for action in event of a fire breaking out. Any storing place should also, it is suggested, be surrounded by a wall of at least 1½ feet in height, so that in case of fire the oil might not flow away. With due precautions the storage of even 2½ tons would be allowable in an open yard, and the fixing of a reasonably large quantity as a maximum for storage is thought to be advisable, on account of the competition in the article and the consequent diminution of profits.

LONDON BOARD OF TRADE.—The Board of Trade has definitely declined to undertake any experiments with oil, thinking it their duty not to waste public money; but they are collecting all the authentic cases of actual saving of life, and any trustworthy evidence, as to the effect of oil upon sea-waves, with the view of embodying them in a report to Parliament. There seems no doubt —Lord Sudeley admitted as much—that under special circumstances, and to a certain extent, oil can be used with advantage on bars, and in landing boats on broken water; but the Board are not sanguine that any remarkable discoveries will be made by the experimenters who are trying, or about to try, the effect of oil. Can any of your readers say which is the best oil for the purpose, and give the reason why? The cost of oil would no doubt be considerable, but when a fleet of fishing boats are running for harbor, if the bar can be smoothed it will be certainly done if a few tons of oil will do it.

WONDERFUL PETROLEUM BURNER.—It is asserted that a wonderful petroleum burner has been invented, by the use of which crude oil may be burned in ordinary cook and parlor stoves, ranges or furnaces, without any alteration in their construction being necessary, giving a fire that will emit no smoke or gas, and which carries with it no danger of explosion. It is claimed for this invention that by it the intensity of the heat can be regulated as quickly and easily as the heat of a gas jet or the force of water from a faucet. The stove is fed with the oil through an iron pipe that connects with a can or tank in the same or a different room. A small perforated brass tube runs through the centre of the stove. The oil as it drops out of the tub falls into burners of asbestos, a fibrous but incombustible material, and when the match is applied, only the oil that has dropped out burns, the perforations in the tube keeping the oil inside safe. The apparatus for an ordinary cooking stove burns about a pint a hour, and the inventor declares that by its use a barrel of petroleum will give as much service as a ton of coal tn the same stove or furnace.

THE OIL WELLS OF SOUTHERN RUSSIA.—Just now, when the American oil wells are pouring forth an abundance of petroleum and the market prices are so low, the prospects of anything that foreshadows competition from the oil regions of other countries cannot but be regarded with lively interest. The development of new sources of supply in the region of the Caspian and Black seas

would seem of late to be making considerable advance, and results thus far obtained are said to be so encouraging, that some sanguine persons engaged in the industry even express the belief that with adequate shipping facilities across the Black Sea they would be able to drive out the American product and to control the markets as far as Marseilles. This is an extravagant claim, however, and cannot be justified by any facts that have been brought to bear on the situation. What the future will bring forth we must wait and see. The progress of Southern Russian methods of manipulating the oil, it must be remembered, is only of recent date. A few years ago, and even now, by some of the small native manufacturers, the whole of the operations connected with the trade were conducted in a primitive manner. The pits were bored by manual labor, the oil was drawn up by the same means, and conveyed in skins to the refineries, where it was subjected to equally crude and primitive manipulation. The vast superiority of American machinery, compared with this rude process of working, is so apparent, that when one enterprising adventurer recently resorted to the former, his example was generally followed by others, so that at present pretty much the methods for boring and drawing the oil here are employed there, the pipes have been laid down to pump the oil from the pits to the refineries and from these to the steamers. This, however, is not done without some opposition on the part of the natives, who have, in common with semi-barbarous people, an unconquerable dislike of labor-saving machinery. Another disadvantage under which they labor is the fact that the business is divided up among a great many small concerns, and there are but few companies that have sufficient capital to manipulate the oil so as to obtain the largest results with the least expenditure. Nevertheless, that the industry is not unprofitable is shown by the fact that the oil lands have risen in price very much during the past few years. The means of transportation are by no means sufficient for the heavy output. It is proposed, therefore, to connect the Caspian and Black seas with a railway, in order to provide additional facilities for reaching the markets of Southern Europe. The continuation of the Tiflis-Poti Railway towards Batoum has been a project of long standing, but only lately taken in hand. The line is now linked in between Baku and Elizabethpol, and about 110 versts remain to be completed between that town and Tiflis. It was hoped by the railway company that through traffic from Baku to Batoum would be practicable during this coming August, but in this they have been disappointed. The iron bridge over the river Kura has been delayed in its erection by the wreck of a vessel containing a large portion of the superstructure. This trouble, we are told by a letter from Baku, under date of May 1, will not be remedied much before November next, when perhaps through traffic will be practicable. Although there are many steamers on the Caspian, they are not numerous enough to cope with the traffic, and more could be profitably employed. These steamers, and many locomotives and steam engines by the way, are adapted to burn the refuse of the refineries, thus reducing the cost of the item of fuel to a considerable extent. The usual method of transporting the oil, and the route generally taken are as follows: From the refineries it is placed on board steamers that convey it to near Astrakhan. Here the steamers, by means of steam-pumps, discharge the oil into barges, which are towed to Tzaritsin. From there, the south terminus of the railway system, the oil is conveyed in special wagons to reservoirs at Moscow, St. Petersburg, Kieff, and other great towns in Russia, whence it is retailed at a handsome profit. The severity of the Russian winter closes navigation on the Volga from October to April, so that transportation is confined to the summer months. There is at present a railway between Baku and Batoum in the process of construction, and great things are expected when it is completed. It was expected to be ready in July, but, owing to an accident, it will not be open for traffic till a later period. As to the effect of competition from this quarter on the American industry, it is too early as yet to speak with certainty. Possibly a portion of the European demand may be met in that quarter at some future time. But with the industry and enterprise of American refineries, quickened by the prospect of Eastern competition, one need not entertain any very serious apprehensions as to the result, come what may.

PETROLEUM lamps are imported in great quantities into China from Germany. Some years ago America had a monopoly in furnishing lamp burners. Germany is now selling these burners at twenty-four shillings per gross. Sewing machines are in good request in China, and manufacturers would do well to study the market. Safes are also in demand, England having almost a monopoly. Door locks are delivered by the United States and England. Nails are sent from the United States and Belgium and England.

Stoves are imported in quantities from the United States to Shanghai, although Glasgow stoves are serious competitors.

PETROLEUM is now attracting attention in Spain, and work has been commenced near Seville by a French company, with a capital of 140,000*l.* The duty on manufactured petroleum being high, there have for years existed refineries where the American oil was operated upon. This discovery is looked upon as of some value, on account of the prospect it opens up of the development of a new industry in Spain. The extent of the deposit, however, is only as yet a matter of speculation, and may result, as all others that have been thought to be valuable — good to squander money on.

CHERRY GROVE.

LATEST PHASES OF THE DECAYING MONSTER.

(*Regular Cor. of the* AGE.)

GARFIELD, Oct. 10, 1882.—Cherry Grove, the great—the monster whose strides for a season exceeded all calculations and squeezed the trade nearly to death—has assumed a very sickly attitude. In fact, the strength has about all gone out of it, and it is of no more interest or importance than the striplings, Clarendon and Sheffield. Reports were circulated last week that the production was about to be largely increased through the pumping process—that the wells responded much better than anticipated. This your correspondent, by personal observation, finds to be as incorrect and untrue as many of the other reports that have gone out from Garfield. Occasionally a producer is encountered who feels that he has been rewarded for his outlay here; but when such one is seen there are fifty others who are gnashing their teeth in sore repentance. It cannot be helped now, however. They are in the boat and must row for life or go under. An operator yesterday stated that he had five wells centrally located—one on 635, one on 672, two on the best portion of 659, and one on 658—that were all in producing order and were running him in debt every day. Instead of these wells flowing regularly, as expected, through the casing, they have to be tubed and pumped same as in the worst form of a lower country played-out district. It will require $1.50 or $2 oil to let the average Cherry Grove producer out of his dilemma and difficulties, and then it will require longer time than many of them can stand.

THE DRILLING BUSINESS.

Drilling is practically at an end, as the territory at the southwest, on lots 680 and 681, to which some had looked in hope of the extension of the producing area, has been proven to be entirely worthless. An occasional new rig varies the monotony along the eastern outskirts, but that is all. Nobody now would drill a well in the centre of either of the lots or squares designated as rich, even were there ten or fifteen acres unpunched. There would be nothing at the bottom when the well got there! About one-third of all the wells in the field may be put down as non-producing, from the fact that something seems to trouble about that number all the time, necessitating bailing, drawing, tubing, rods, or cleaning out. The bailing process is still pursued with energy by many operators, but it is very expensive. When the sand runs in and tools are required to stir it up, so as to make it bailable, the services of two men at least, besides the set of drilling tools, are necessary. This causes an outlay *per diem* of, for the men, $6; for the tools, $7; total, $13. All that the average well, even after incurring all this expense, is expected to yield, is about twenty-two barrels a day, including all that is lost by accidental overflowing. Where the profits come in by which the owners are to be reimbursed for original cost or outlay is a mystery to the undersigned.

THE TOTAL YIELD.

Estimates on the total yield are numerous and widely different. They are made to suit the objects and aims of the parties making them, who are, as a rule, large speculators in oil. They have their scouts who tramp the field over with a regularity that becomes truly interesting. These "scouts" are beyond question well posted in all that transpires. Their estimates on production in the field are tolerably reliable, but it should be remembered that the public is never made acquainted with the result of a scout's explorations. The principal knows, and he seems to know enough to lock up his information where it will do the least harm to himself or the side of the market upon which he is arraigned. These scouts furthermore are as true to each other as were Jonathan and his young friend David, who scouted around among the hills of ancient Palestine in search of a first-class hiding place from the old man Saul. They play into each other's hands in the information game, not only in matters pertaining to the production, but also to the condition of the venerable wild-cat ventures that become of so much importance occasionally. But the AGE is not dependent

upon the scout of the speculator for its information, nor yet upon pipe-line runs alone. It is not a difficult task to obtain the solid truth regarding the condition of stocks at the wells, which, to the mind of the writer, is the only proper method of arriving at facts relating to the average out-put. On the 7th inst. 246 wells were producing oil, and 102 were standing idle, or were being operated upon. For the twenty-four hours, ending the 8th, the 246 rendered an aggregate yield of 5,904 barrels, an average each of twenty-four. Had all the wells in the section been producing at the same rate, the total yield would, of course, have been 8,352. But as about that number — that is, one hundred and two — are always in a doctoring condition, the production at the time named should be put at the first calculation, viz.: 5,904 barrels *per diem*. This is a drop from the same date last month of 19,096 barrels, and from August 26th, of 32,096 barrels per day. This seems too strange to be true, but these are cold facts that the trade must swallow regardless of taste or smell.

OTHER SECTIONS.

While the section above described exhibits a strong disposition to retrograde, there are others in Warren and Forest not so inclined. And, furthermore, there are in all probability some undeveloped spots of greater or less magnitude that are destined to appear above the greasy horizon. The Shannon Well on the Cooper tract, which was mentioned in last month's letter, has made, since being opened, about thirty-five barrels a day. It is beyond question a relative of the producers in the Magee & Horton section. Between the points named, and fairly lined, two other wells—the Clark & Foster and the McKinney—have been introduced to the trade in all their strength and beauty. They are moderate producers, however, being capable, in the classification, of a rank no higher than the ordinary Warren County well. But there would appear to be no cause for the belief that the daily yield of the district outside of Cherry Grove was destined to undergo any serious decline in the immediate future. Warren and Forest Counties will undoubtedly furnish drillable territory for some time to come. The Grandin and Kelly venture at Balltown continues to produce in a fair degree—about twenty-five barrels a day. This is sufficient to inspire confidence in the territory's future, though nothing of a Cherry Grove nature is looked for or even thought of. Thus for the present Warren and Forest Counties are rather quiet. There are no important tests coming in immediately except those which are closely allied to the Shannon and Balltown ventures. In both of these it is more than likely that some fair producers will be obtained. They do not give promise, however, of being possessed of sufficient strength to press prices far below the ninety cent point.

THE ALLEGANY FIELD.

TABLE SHOWING THE PROGRESS OF DEVELOPMENTS AND PRODUCTION OF THE ALLEGANY (N. Y.) FIELD.

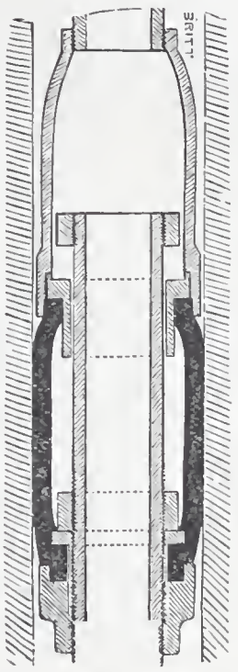
Month.	No. of wells completed.	Dry.	Production, bbls., of new wells.	Average per well.	Average daily Production of Field, Bbls.	Drilling.	Rigs.	Stocks in wooden tanks. Bbls.	Stocks in Iron tanks. Bbls.
Total, 1880	8	42	76	9½	76	4	6	. . .	. . .
Jan'y, '81,	4	2	18	9	94	4	5	. . .	. . .
February	4	1	24	6	112	4	8	. . .	. . .
March .	5	2	60	12	162	4	7	. . .	. . .
April . .	3	1	20	10	170	5	6	. . .	. . .
May . .	4	1	48	12	212	20	21	. . .	. . .
June . .	14	8	130	9¼	327	24	35	. . .	. . .
July . .	22	5	275	12½	588	47	57	. . .	. . .
August .	53	17	586	11	1080	62	68	. . .	. . .
September	63	11	910	14½	1740	105	118	. . .	. . .
October .	96	5	1432	15	2896	164	198	38000	108891
November	154	10	2732	17½	5180	155	200	84666	142216
December	196	2	5115	26 1/10	8937	187	204	180200	169250
Jan. 31, '82,	162	2	3914	24 1/6	11123	191	209	270860	243147
Feb. 28th	189	4	4154	21.97	13200	212	201	373460	258247
March 31st	216	2	5580	25.83	16000	215	221	374490	359347
April 30th	257	6	6356	24¾	20760	226	230	400000	417347
May . .	265	7	5992	22⅝	22438	179	191	440000	542347
June . .	163	11	3605	12	22220	94	153	475000	650000
July . . .	81	. .	1488	18⅓	19391	45	123	375000	550000
August .	60	6	1199	20	17650	34	98	295927	550000
September	29	3	435	15	16320	39	58	275610	540000

AS seen by the footings, the volume of new operations has declined in this field to very limited proportions, only 29 wells having been completed in September against 60 in August. The average daily yield of the entire field fell off 1,330 barrels from the August figure, which was 17,650. This makes the average for September 16,320, and on the 10th inst. it was somewhat below this point. It will be seen, therefore, that it will require the drilling of a greater number of new wells each month than were completed in September to sustain Allegany's production. There is some territory to drill yet in Genesee, Clarksville and Bolivar, and, possibly, some in Alma. In Wirt township there have existed apprehensions of the possibility of opening a field of some significance near Friendship. A well was sunk at Nile, a small hamlet two miles south of the former place, during the past summer, which has produced a few barrels of oil a day since. A second venture has just been finished in the same latitude which, how-

ever, has had a tendency to knock aspirations into "pi." This well was located nearly a mile northwest of the Nile producer, and the Wilcox failure being south of it a few miles, leaves small hope of stirring up a boom of colossal proportions in that section. The recent rise in oil has had a tendency to inspire fresh confidence, and some operators have resumed the work of drilling. The day, however, of Allegany's greatness seems to have passed forever. It cannot more than sustain a 12,000 barrel production, unless something of some importance should be speedily added to its producing area. This might occur; but prospects are, at present, exceedingly unpromising of such a result.

SCIENCE AND THE DRILL.

SCIENCE is aiding the producers of petroleum to a remarkable extent in simplifying the methods of drilling and pumping the wells. There is no problem presented that some genius does not solve at the point of necessity. The Cherry Grove field, however, offers one that seems to cause much trouble and perplexity in working out. The sand or oil rock of no other field possesses such peculiar characteristics. In the McKean County field every operator knew almost to a certainty what he should obtain by sinking wells in certain latitudes, even before commencing, as the oil rock beneath the surface of the whole area retains a striking similarity, not only as to color but also as to quality and texture. In some sections, however, the clear sand, having a reddish cast, is found to contain greater quantities of oil than in others. This, of course, is quite easily understood and explained on scientific principles. The wells, though differing in character to some extent—some possessing more gas than others—yet in order that each should be made to produce to the best of its ability it must be drilled, through—or nearly so—the sand formation, torpedoed and tubed. For three years nine-tenths of the wells flowed by the simple process of packing. The packer and its use are as familiar to an oilman as the saw and chisel are to a carpenter and joiner. To parties residing remote from the Oil Regions it, of course, may require a word of explanation. It is simply a rubber tube, from eight inches to fifteen inches in length, and having a diameter on the outside—a trifle less than that of the well—about five inches, the well being five and five-eighth inches. The hole through its centre is two inches in diameter, same size as the tubing. It will be more easily understood by closely observing the following cut, which represents a packer ready for use. This is known as the Dresser packer, and is quite largely used, though there are a dozen others in the general market:



The rubber is that part having what would appear to be bowed or convexed sides. Both ends of the rubber are so encased as to be held tightly, and when the tubing is set upon the bottom of the well, the pressure of all the string above the packer comes upon the rubber, pressing it in the shape indicated, and fitting it so tightly to the walls of the well as to prevent the escape of even the strongest flow of gas. The tubing is jointed in the centre of the packer, so as to work like a swivel, having a few inches of room to allow of the pressure needed.

They are usually placed from fifteen to seventy-five feet above the oil rock. By the process, all contaminating agencies, whether of salt or fresh water, or cavings from the rocks above, are prevented from interfering with the production of the wells. In some cases, as above related, wells have remained untouched in that condition for years, causing no further expense than the attention necessary to the running of the oil by the pipe lines.

In the Cherry Grove district, however, new and complicated difficulties in this regard have been encountered. The wells do not show an inclination to flow when packed, nor do they respond to the pumping process to a satisfactory degree. The oil rock is of that peculiar texture that even light torpedoing causes an immense in-

flow of the loose sand, which prevents the wells from flowing, and also constitutes an obstruction of a dangerous and annoying stripe to the pumps, choking them up, destroying their use, and cutting valves all to pieces. How, therefore, to overcome these difficulties is the problem of the hour. The wells, one by one, are going out of the producing business, and some of them have gone down so suddenly that their owners are unwilling to believe that it is because of a total failure of the oil supply. In this they are most probably correct. Practical men, who have remained with their wells, and have continued to bail out the sand and water that gather regularly every day, find that their wells are maintaining a good fifty-barrel-per-day production, while those who have neglected this have dry holes on their hands. The cry from Cherry Grove is very similar to that which went up from Bullion when her big gushers collapsed in 1877. Those who had small wells, in many cases abandoned them, while others leased or let theirs to the best advantage. Young men who remained and nursed some of these old wells carefully realized larger gains than many who fled, even to the great Bradford field. Cherry Grove must have some oil yet.

But it is not her oil we desire to speak of now; it is a plan for abstracting it from the shattered gravel bed below, and suggestions are in order. They will be made, doubtless, and, in fact, we already hear of an invention for cleaning those wells, but have not had the good fortune to behold it. Meanwhile, in the drilling apparatus now in general use there is little to perfect. Wells are drilled in fifteen, twenty and thirty days' time, that ten or fifteen years ago would require from thirty days to six months to complete. The character of the tools used at the present time was described in a former number of the AGE, and is therefore omitted here.

THE Anchor Oil Company made several hundred thousand dollars out of excited producers in the form of what might be termed extortionate bonuses. Then when a lessee happens to get a well of limited capacity, as to yield, if any part of the bonus remains unpaid, the company immediately serves an injunction on him, prohibiting him from removing anything he may have placed on the premises. If the lessee gets away with himself he is happy. In one case, it is said, a gentleman had to take a borrowed augur stem out at the other end of the hole, and he is now having it shipped via the Peking & Tiona Railway.

RUNS, DELIVERIES, STOCKS.

TABLE showing the August and September Pipe Line Runs and shipments, with stocks, on September 30th, 1882—official. Each barrel 42 gallons:

DISTRICT.	RECEIPTS, Pipe.	BARRELS, August.	BARRELS, Sept.
Bradford	United		
Tidioute & Titus'e,	"		
Lower Country	"		
Monongahela	"		
Total	"	3,176,053.39	2,569,036.20
Bradford	Tidewater	258,861.37	244,695.68
Warren	McCalm't St. Co.		55,450.09
Titusville	Octave Oil Co.	3,817.21	4,057.90
Oil City	Charley Run	436.71	508.32
Shaffer	Shaffer Run	618.00	697.00
Franklin	Franklin Pipe	8,169.17	7,945.24
Total all Lines		3,447,955.85	2,882,390.43
Average per day, September			96,079.68
Average per day, August			111,243.38
Average per day, July			95,192.11
Average per day, June			95,522.95
Average per day, May			85,563.70
Average per day, April			80,093.98
Average per day, March			83,724.96
Average per day, February			83,547.40
Average per day, January			71,855.35

Deliveries.

DISTRICT.	PIPE.	BARRELS.	BARRELS.
All Points	United	1,870,745.07	1,799,316.21
Warren	McCalm't St. Co.		10,083.52
Titusville	Octave Pet. Co.	4,612.04	3,417.95
Franklin	Franklin Pipe	5,223.71	7,318.06
Shaffer	Shaffer Run	0,315.08	0,241.04
Oil City	Charley Run	0,361.56	0,569.72
Bradford	Tidewater	166,187.23	171,230.31
Total deliveries		2,047,444.69	1,992,176.81
Am't of Runs in excess of Shipm'ts, September			890,213.62

DISTRICT.	PIPE.	*Net Stocks August 31.* BARRELS.	*Net Stocks Sept. 30.* BARRELS.
Oil City	Charley Run	3,756.25	3,684.95
Bradford	Tidewater	2,362,267.83	2,432,106.52
All Districts	United	28,827,548.02	29,594,536.25
Shaffer	Shaffer Run	26,815.25	27,048.16
Warren	McCalm't St. Co.		121,246.88
Titusville	Octave Oil Co	10,171.73	8,794.29
Franklin	Franklin Pipe	22,489.53	23,116.71
Total September			32,210,533.76
Total August			31,253,047.61
Total July			30,157,021.20
Total June			29,540,517.47
Total May			28,833,715.51
Total April			27,969,884.48
Total March			27,252,806.93
Total February			26,414,274.36
Total January			25,788,071.79
Increase September			957,485.53
Increase August			1,096,026.41
Increase July			616,503.73
Increase June			706,801.96
Increase May			863,631.03
Increase April			717,077.55
Increase March			838,532.57
Average increase per day, September			27,874.64
Average increase per day, August			35,355.69
Average increase per day, July			19,887.21
Average increase per day, June			23,560.15
Average increase per day, May			27,859.06
Average increase per day, April			23,902.58
Average increase per day, March			27,049.44
Average increase per day, February			22,364.00
Average increase per day, January			12,174.73

SEPTEMBER OFFICIAL QUOTATIONS FOR CRUDE.

THE following table shows opening, highest, lowest, and closing quotations at the Oil Exchange each day; also average for the month:

	Opening.	Highest.	Lowest.	Closing.	Avg.
1	55⅞	55⅞	54⅛	54⅞	55
2	55	55	53⅝	53⅞	54⅜
4	53¾	54¾	53⅜	54⅜	54⅛
5	54¾	56⅛	54¾	55⅝	55½
6	55¾	58⅛	55¾	58⅛	56⅞
7	58⅛	58⅜	57	57⅞	57⅝
8	58½	50	58½	59⅝	59¼
9	59⅝	59⅜	57⅞	57⅞	58½
11	58½	61½	58½	61½	60
15	61⅞	63⅛	59¾	63⅛	61½
13	62¾	65	62½	64⅛	63⅛
14	64½	67½	64⅛	67¼	65¾
15	68⅜	71½	68¼	68½	69⅞
16	68¼	75½	68¼	75¼	71⅞
18	82¾	86	81	82¼	83½
19	83¼	83½	76⅞	77¾	80¼
20	77	80	75⅜	76½	77⅝
21	75⅝	78½	74	78½	76¼
22	78½	85	83⅞	83¼	84½
23	85½	88⅛	87	77¼	87¾
25	90	90	86	88½	88
26	87½	87¾	86¼	87	87
27	86⅞	87⅛	84½	84⅝	85¾
28	84¼	87½	79⅞	87½	83⅝
29	88¼	90¼	86¼	89⅞	88¼
30	95	97	92½	97	99¾
Grand Average,					74⅛

SEPTEMBER OFFICIAL QUOTATIONS FOR REFINED.

THIS table gives the daily quotations for refined oil at the principal foreign as well as domestic ports:

August.	N. Y. cts.	Philadelphia. cts.	Baltimore. cts.	Antwerp. fr'c.	Bremen. m'rk.	London. pence.
1	6¾	6⅞	6⅞	17½	6.75	5⅜
2	7	6⅞	6⅞	17½	6.75	5⅜
4	7	6⅞	6⅞	17½	6.75	5⅜
5	6¾	6⅞	6⅞	17½	6.75	5⅜
6	7	6⅞	6⅞	17½	6.75	5½
7	7	6⅞	6⅞	17½	6.80	5½
8	7⅛	7	7	17½	6.80	5½
9	7⅛	7	7	17½	6.80	5½
11	7⅛	7	7	17½	6.90	5⅝
12	7⅛	7	7	17½	6.95	5⅝
13	7⅛	7	7	17½	6.95	5⅝
14	7¼	7⅛	7⅛	17½	6.95	5¾
15	7⅜	7⅛	7⅛	17½	6.95	5¾
16	7¼	7⅛	7⅛	17⅝	6.95	5⅝
18	7¾	7⅜	7⅜	18	7.30	6¼
19	7¾	7⅜	7⅜	18	7.30	6¼
20	7¾	7⅞	7⅞	18	7.30	6¼
21	8	7⅞	7⅞	18⅝	7.45	6¼
22	8	7⅞	7⅞	18⅝	7.45	6¼
23	8	7⅞	7⅞	18⅝	7.45	6¼
25	8	7⅝	7⅝	19⅜	7.70	6¾
26	8	7⅝	7⅝	19⅜	7.70	6¾
27	8	7⅝	7⅝	19¼	7.65	6¾
28	8	7⅝	7⅝	19¼	7.65	6¾
29	8	7⅝	7⅝	19	7.45	6¾
30	8⅜	7⅝	7⅝	19	7.00	6¾

CRUDE OIL MARKET.

MONTHLY AND YEARLY AVERAGE PRICE OF PIPE LINE CERTIFICATES OR CRUDE OIL AT THE WELLS, IN BARRELS OF 42 GALLONS EACH.

A. D.	Jan. Ave'age	Feb. Ave'age	March Ave'age	April Ave'age	May Ave'age	June Ave'age	July Ave'age	Aug. Ave'age	Sept. Ave'age	Oct. Ave'age	Nov. Ave'age	D'emb'r Ave'age	Yearly Av'ges.
1859.	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	20.00	20.00	20.00	20.00	20.
1860.	19.25	18.00	12.62½	11.00	10.00	9.50	8.62½	7.50	6.62½	5.50	2.75	2.75	9.
1861.	1.00	1.00	1.00	.62½	.50	.50	.50	.25	.20	.10	.10	.10	.
1862.	.10	.15	.22½	.50	.85	1.00	1.25	1.25	1.25	1.75	2.25	2.25	1.
1863.	2.25	2.50	2.62½	2.87½	2.87½	3.00	3.25	3.37½	3.50	3.75	3.85	3.95	3.
1864.	4.09	4.37½	5.50	6.56	6.87½	9.50	12.12½	10.12½	8.87½	7.75	10.00	11.00	9.15½
1865.	8.25	7.50	6.00	6.00	7.37½	5.62½	5.12½	4.62½	6.75	8.12½	7.25	6.50	6.87
1866.	4.50	4.40	3.75	3.95	4.50	3.87½	3.00	3.75	4.50	3.39	3.10	2.12½	3.59
1867.	1.87½	1.85	1.75	2.07½	2.35	1.90	2.62½	3.15	3.40	3.55	2.50	1.87½	2.74
1868.	1.95	2.00	2.55	2.82	3.75	4.50	5.12½	4.57½	4.00	4.12½	3.75	4.35	3.41½
1869.	5.75	6.95	6.00	5.70½	5.35	4.95	5.37½	5.57½	5.50	5.50	5.80	5.12m	5.63¾
1870.	4.52½	4.52½	4.45	4.22½	4.40	4.17½	3.77½	3.15	3.25	3.27½	3.22½	3.40	3.89
1871.	3.82½	4.38	4.25	4.01	4.60	3.85½	4.79	4.66	4.65	4.82½	4.25	4.00	4.34
1872.	4.92½	3.80	3.72½	3.52½	3.80	3.85	3.80	3.58½	3.25	3.15	3.83½	3.32½	3.64
1873.	2.60	2.20	2.12½	2.30	2.47½	2.22½	2.00	1.42½	1.15	1.20	1.25	1.00	1.83
1874.	1.20	1.40	1.60	1.90	1.62½	1.32½	1.02½	.95	.95	.85	.55	.61½	1.17
1875.	1.03	1.52½	1.75	1.36½	1.40	1.26½	1.09	1.13	1.33	1.32½	1.44	1.55	1.35
1876.	1.80	2.00	2.01	2.02¼	1.90½	2.01¾	2.24½	2.71	3.81	3.37½	3.11	3.73	2.56¼
1877.	3.53¼	2.70	2.67½	258	2.24	1.94⅜	2.07½	2.51	2.38	2.56¾	1.91	1.80	2.42
1878.	1.43	1.65¼	1.59	1.37½	1.35¼	1.14	.98¾	1.01⅜	.86½	.82½	.89⅜	1.16	1.19
1879.	1.03	.98	.86¼	.78½	.76	.68⅜	.69⅞	.67⅛	.69½	.88½	1.05⅝	1.18⅛	.85⅞
1880.	1.10¼	1.03⅛	.88¼	.78	.80	1.00	1.06¼	.91	.96	.96⅞	.91⅞	.91⅝	.94½
1881.	.95½	.90⅜	.83⅜	.86¾	.81⅞	.81¼	.76⅞	.78⅝	93-3–16	.94¾	.83	.84	.85¾
1882.	.83¼	.85¾	.80⅞	.78½	.69⅞	.54½	.56⅞	.58¾	.74⅛	. . .	. . .	. . .	. . .

JOHN D. ARCHBALD, brother of W. D. who failed at Oil City, telegraphed the latter on the 9th inst. to draw on him for all the funds he needed. There's one man the Standard was not instrumental in downing. John D. is vice-president of that company.

THE Clark and Foster Well, located on warrant 2736, near the northeast corner of the Cooper's estate, upon which the Shannon Well is situated, was completed Sept. 6th, and is no better than the ordinary Sheffield Well. It is good for about fifteen barrels a day, after settling to business.

THE PETROLEUM AGE.

DEVOTED TO THE

INTERESTS OF THE PETROLEUM TRADE.

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W. A. MOSSMAN, *Business Manager.*
W. J. McCULLAGH, *Editor.*

PRODUCERS seem to have tired of drilling wells, and have turned their attention to speculating in the product they unwisely attempted to produce at a *loosing*. Good business.

THOSE who pretend to be authority on oil matters should not depend exclusively upon reports published in the daily papers, or by officials of corporations who may have an eye to personal gain.

THE daily production of Cherry Grove is now placed at less than 6,000 barrels. On the 26th of August last it was estimated at 38,000, a fall of only 32,000 barrels per diem; a moderate drop, to put it mildly.

A CAREFUL compilation of figures on shipments and foreign stocks produces these satisfactory results: Consumption for 1882, 69,330 barrels per day; amount of Pennsylvania crude probably necessary to supply the trade for 1883, 79,246 barrels. The question arises: "Will it be produced? If not, then———"

WHEN the September number of the AGE was printed oil was selling at sixty cents a barrel, and before it reached the public, in less than three days, the commodity was commanding eighty-five cents, and everybody who had a dollar to spare was climbing over the oil exchange to drop on to at least a barrel of it at that.

THE article directed to the editor from San Francisco, is from our regular correspondent in that city. In the July AGE the paragraph from the San Francisco *Commercial*, to which he refers, was printed in good faith, supposing a paper printed in the interest of commercial affairs could be relied upon in so simple an affair as giving the position of Pacific coast petroleum. Our correspondent's statements are correct all the time.

THE "put" and "call" market was boomed by the last rise in oil to a remarkable extent. Those who had been sufficiently fortunate, or more properly speaking, perhaps, sufficiently well posted in the approaching whirlwind that so quickly elevated prices, realized handsomely on limited investments, where the money was paid on "calls." Scores of poor people in Bradford for an outlay of a few dollars, massed hundreds, and some even into the thousands.

WHEN oil touched ninety-nine cents in New-York on the 30th ult., it was a pity somebody didn't add another penny to make it a dollar. Unless the situation changes materially, however, it is only a question of time when the happy day will arrive. As it is, the producers are happier than they have been for over a year. An injunction should be applied for immediately to restrain the wild-catters from further explorations, in which event, the end of cheap light and useless waste of time and cash would be attained.

IN no inland region of the world, so remote from ocean shore, can there be found such a reading public as in the Oil Regions of Pennsylvania and New-York. When it is considered that a town of the size of Bradford—having only from ten to twelve thousand inhabitants—supports two daily, two Sunday papers and a monthly magazine, it must be decided at once that the people are far removed intellectually from the ordinary types who inhabit the larger cities of the country. It is an evidence of superior intellectual attainment that commands admiration, and produces a feeling of satisfaction in the breast of every citizen. Support them.

DURING the recent rise in oil the brokers of the various exchanges were besieged by all classes of people to invest their earnings. In this way many of them, even to the bootblacks, were made extremely happy. Ladies visited the *marts* in scores, and ordered the purchase of oil on margins, and the next day were notified of profits sufficient to wipe out all outstanding millinery accounts acquired during the times of depression—for it must be remembered oil ladies never appear to disadvantage in this direction whether the drillers of their lord's wells are properly rewarded or not—besides leaving a balance for future display. In one case a barber at Oil City is reported to have made over $30,000 by this kind of speculation.

THE price of real estate in Warren County has taken a slight set-back.

WITH production and consumption rubbing noses, it would seem as if oil was cheap at 90 cents a barrel.

OPERATIONS in the Alleghany field will revive somewhat, though, to date, the inspiration has not seized operators to that extent that market shorts desire.

THE people of Bath, N. Y., have taken a bath in an oil fever and have come out tolerably well cured of the disease. Bath is tolerably well lined with the Richburg District, on a north-east course to the ends of the earth. The north-east course, however, does not always insure good results.

BROKERS in the Bradford Exchange frequently play a bluff game with a bunch of fifty or a hundred thousand barrels, by offering to sell or buy the same as interest suits. It does not always have the desired effect, however, as they are sometimes taken at their offer, to their own consternation.

THE new well at Nile, New-York, is attracting some attention from the fact of its pursuing the same course of all other wild-cats in that region—shutting itself in and playing mystery. If it ever produces oil enough to pay for the outlay incurred in sinking it, it will certainly rise to the dignity of mystery.

THE article in another column on "Russian Petroleum" will be read with interest, as it is the first statement of fact that has been given to the public regarding that portion of the Russian oil field bordering on the Black Sea. The information was obtained by an interview with Mr. Wm. Mason, who was engaged in constructing a pipe line there for the space of one year.

WHILE bulls and bears are scraping their eyes out around the "pen," and squabbling for control of prices, the noble producer smiles and maintains a very happy as well as dignified attitude. A 45 cent-rise he considers a very good thing to have in the family, even if it never passes the dollar mark. He says he can produce oil and make ends meet now without suffering the tortures of those terrible night-mares that have been prowling around the region for the past six months.

Major T. B. HOOVER, formerly of the Petroleum Real Estate Company of Bradford, in connection with Phillips Bros. of Bullion notoriety, is drilling a test well on a large lease lying south-west of the Bald Ridge district. The well is east of a small lubricating pumper, owned by the Rochester Tumbler Works, about one mile, and is also north of the same. The Rochester well has produced a couple of barrels a day for several years, but never yielded more than 10 barrels in one day.

POTTER COUNTY possesses some surface "shows" that are taken as indications of the existence of oil in the latitude; but the trouble with these indications is they are not of the true and oily type. There is a vast difference between an oil sand and much of the pebble rock found on the surface. The outlines of the regular oil belt are determined by this method, and all that is required for the purpose is a knowledge of the science which treats of the properties of mineral substances — or mineralogy.

THE fact that oil brings less than its intrinsic worth is good evidence that it is a superior article in which to invest money. And, moreover, the other fact that it has sold for the past six months for less than one-half its proper value, when prorated with stocks and production, is no reason why producers should be satisfied now with an advance of 40 cents a barrel. This is the cry of everybody, "Forty cents is a big advance; we should be satisfied." This is folly. Give us full value or nothing. Two dollars this year if possible!

IT would appear from statements made by certain aids and agents of the Standard Refining Company that the institution was in favor of lower prices for crude. This does not look well, to say the least, in the face of an advance in refined of nearly a cent a gallon. It is true, ninety cents or eighty-five cents a barrel is vastly more remunerative to the producer than the filthy half dollar tendered him while the scare of Cherry Grove existed. It is all right for the Standard or anybody else to purchase crude as cheaply as possible, but it seems ridiculous for producers to give it away for 100 per cent. less than its present value, just because they say "ninety cents is much better than fifty."

THE Warren people are not fully posted in the tricks of the oil trade. They are not quite quick enough in their powers of perception. They

have made themselves comfortably rich by hard knocks in the business of lumbering and other industries, but as to stock and oil speculations they have engaged in them but very lightly. Recently, however, they became imbued with the spirit of enterprise and ventured to an extent rarely witnessed in rural retreats. Some of them made what they considered heavy purchases of oil when prices first touched the eighty cents in the recent rise. On the same day the market neglected to advance. On the contrary it receded somewhat, and the question "what do you think of the market?" was perhaps more frequently asked than ever before in Warren. Many of them bore the load until the market returned the second time toward the seventies, when they kicked up their heels and shouted, "Let her go, boys," and dumped their packages. The same night the market rebounded to the tune of seven cents, closing at eighty-seven bid. Then they were sorry.

THE only chance a purchaser of oil takes at present prices is against the development of a new field of some magnitude. An annex to the Warren or Forest County section, or even to Bradford or Allegany, will not answer the purpose of the opposing element. There is, perhaps, nothing more sure and certain to come than a steady decline in production until stocks are drawn upon to supply the cravings of the world for petroleum of the American species. Next year the stocks now in store are likely to be reduced from three to four millions of barrels. Is it difficult, therefore, to form a tolerably correct idea of what is to result in the oil market? There is the one chance, of course, against the ninety and nine that this will not occur; but when a man bets with ninety-nine chances out of the hundred in his favor he is certain to win, especially if he makes more than one wager. Oil at 95 cts. a barrel should be looked upon as a very cheap article, and should furnish food for large investment. With the present outlook nobody but a confirmed bruin could be led to any other conclusion.

THE outlook for the business as compared with 1876, when oil boomed to $5.00 a barrel, is not by any means so promising. There would appear but two necessities, however, to force prices even under present circumstances to a figure but little short of that of 1876. The first is the removal of fear of the wild-catter, and, second, the use of a sufficient amount of money in speculation to hold the floating certificates off the market. If there are twenty millions of barrels represented by "outstanding certificates," it, of course, would require about twenty million dollars to protect prices at one dollar a barrel against the danger of having stocks dumped for depressing purposes. And as prices advance a *pro rata* increase in the amount of money used in speculation must occur, or there would still be *snags* in the stream. In 1876 the stocks above ground were very moderate as compared with those of the present day. But, could the trade become thoroughly satisfied that no other new field was about to pounce upon it, the money question would be quickly solved, and the market would proceed in the upward direction slowly but surely until the intrinsic value of a barrel of oil was obtained.

OIL brokers and dealers are the most reckless of business men, as a rule. There are some exceptions, however, but the majority take chances that at first sight appear startling in the extreme. The failure of W. D. Archbold, of Oil City, is proof of this. The gentleman, though of moderate means, was found to have loaded himself with nearly a million and a half of barrels of oil, or, at least, had agreed to furnish that amount. This would have been all well enough had it not been for the fact that about half of the amount was represented by "calls" or privileges, which he had sold for a nominal sum, at stipulated prices, ranging from seventy-five cents to eighty-five cents a barrel all the year. But Mr. Archbold is not the only man who engages in this questionable business which is a mere sale of opinion regarding the future condition of the business and the market. When Cherry Grove came in it was at once decided that, so far as 1882 was concerned, it was not to witness anything like a dollar market, and of course the reckless speculator was willing to take all chances against a contrary result. How easy it is to be mistaken, and how foolish it is for men of small means to proceed in speculations so awfully deep that defeat must surely result in disaster and financial death. It is hoped that this spirit, which has prevailed for some time past to a more alarming extent than usual, may depart. There is no more legitimate business in the world than dealing in any commodity that is transferable, and oil surpasses all other productions in this respect, owing to the round thousand being the representative certificate.

REPORT
OF
OIL OPERATIONS FOR SEPTEMBER.

WELLS COMPLETED.

Bradford Field.

EAST BRANCH.

Lot.	*Operator.*	*Production.*
Gregg, McIntyre		10
Clapp, J. M. Clapp		15
Deiter, Emery Oil Co., No. 21		15
Morris,	" " 41	10
Tibbitts,	" " 10	10
Lot 188, Bingham, John McKeon, No. 5		40
188,	" " " 6,	50
Wells		7
Production		150

KENDALL CREEK.

Monroe, A. M. Simpson	10
E. T. Co., F. W. Mitchell, No. 3	15

COLE CREEK.

Lot 490, Bingham, Johnson & Union Oil Co.	25
438, J. S. McKinney & Co., No. 23	30
537, George V. Forman, No. 8	75

OIL VALLEY.

Duke, C. H. Coffin & Co.	15
Wells	6
Production	170

THE ALLEGANY FIELD.

ALMA.

Lot 18, Mrs. O. Taylor	15
51, Nicholson & Co.	dry
Wells	2
Production	15

BOLIVAR.

Lot 31, Forman & Morfet est	15
32, Wm. Sawyer	20
32, Manning & Co.	20
37, Moran & Plummer	15
37, Parker & Dunning	10
38, Oil Well Supply Co., No. 3	15
38, Fisher Oil Co.	15
39, Geo. V. Forman	20
45, Forman & Frachot Bros.	20
46, Chauncey Oil Co., No. 5	20
46, Palmer & Thyng	5
Wells	11
Production	175

WIRT.

Lot 33, Taylor & Allen, No. 10	15
41, Coast & Rice	15
41, Norton & Cheeseman	10
41, " "	15
Wells	4
Production	55

GENESEE.

Lot 8, McDougal Oil Co., No. 23	30
8, Bradley & Co.	25
24, Daggett Oil Co.	20
24, Hammond & Barton No. 4	20
24, Book & Gartland, No. 2	20
24, " " " 3	25
24, Wm. Haldeman, No. 4	15
30, F. E. Tyler & Co. est.	20
Wells	8
Production	175

CLARKSVILLE

Lot 1, Knox Bros	dry
10, Cuba Oil Co.	10
17, Huston & Brecht	5
Wells	3
Production	15

SCIO.

Lot 3, O. P. Taylor	dry
Wells	1

WARREN FIELD.

CHERRY GROVE.

Lot 589, Wilcox & Co.	15
590, Mehoopany Oil Co., No. 3	70
590, " " 4	50
590, Brown Bros.	20
610, Mascotte Oil Co., No. 2	5
610, Armor, Roth & Hays, No. 3	60
611, Forest Oil Co., No. 4	75
Lot 611, Forest Oil Co., No. 3	80
611, " " 9	15
611, " " 10	100
612, Fisher Bros.	5
612, Wilcox Oil Co.	15
617, Cherry Grove Oil Co.	5
618, C. K. Book, No. 3	40
618, O'Dell & Co., No. 1	40
618, " " 2	60
618, Armstrong & Speer	nothing
618, R. Sterrett & Co.	nothing
618, J. M. Guffy	65
619, Taylor & Hoffman	nothing
619, J. H. Van Wormer	10
619, M. Murphy, div. 9	nothing
619, Smith & Zeigler, div. 1	dry
619, " " 2	nothing
619, " " 14	15
620, Carter & Hurd, No. 3	20
620, Phillips Bros.	10
620, A. J. Brown, No. 2	nothing
634, Waugh & Co.	15
635, Carroll Bros., div. 19,	25
635, Cedar Oil Co., div. 21	nothing
635, Thompson & Andrews, No. 2	nothing
635, C. Miller, div. 26	nothing
636, Wood & Tucker	30
636, Payne & Chambors	20
636, Cummings & Co., div. 4	nothing
636, A. J. Gartland, div. 5	10
636, W. J. Innis & Co., div. 8	nothing
636, J. T. Johnson, div. 9	nothing
636, R. Caldwell, div. 11	nothing
636, S. Comfort, No. 2	30
636, " " 3	nothing
636, " " 4	nothing
645, Kervin & Glatzau, No. 2	nothing
645, Rockland Oil Co., No. 3	5
645, R. J. Straight	dry
646, Union Oil Co., No. 7	nothing
646, " " 9	45
646, " " 12	40
646, " " 10	64
646, " " 11	80
646, " " 15	100
646, Forgie Bros	2
646, Grace & Goldsborough	25
646, "	25
646, Globe Oil Co., pumping	8
646, Kennedy Oil Co., No. 4	40
646, " " 5	50
647, Anchor Oil Co., No. 5	100
647, " " 7	50
647, " " 8	nothing
647, " " 10	55
647, " " 20	180
647, " " 21	nothing
647, " " 22	80
647, " " 35	nothing
657, Book & Arters, No. 3	nothing
657, A. Sheidmantle, No. 2	8
657, A. P. Tanner, No. 2	nothing
657, Cooper & Giles	20
657, Lupher Bros. & Hackett, No. 3	20
658, Hopkins & Co.	40
658, Mallory & Co.	75
658, Fitzsimmons & Co.	nothing
658, Vandergrift & Kelly	75
658, Briody & Barnsdall	90
658, Caldwell & Boyer	nothing
658, Stewart & Wickham	nothing
658, J. Markham, div. 34	nothing
659, J. Ottman, No. 1	nothing
659, Geo. Given	25
659, Chas. St. John	nothing
659, Pratt & Co., No. 1	25
659, Wetmore & Murphy, No. 2	10
659, " " 3	15
659, " " 4	30
671, R. E. Green, No. 2	100
671, " " 3	150
671, " " 8	40
671, " " 9	40
671, " " 16	50
671, J. McKeown, No. 2	20
672, T. Mullin, Jr., No. 2	30
672, Spence & Cupler	70
672, Greenlee & Anderson	40
672, Taylor & White	20
672, Mattison & Thompson	25
672, Coughlin & Roach	nothing
672, Frew & Co., pnmping	50
672, Hagan & Wallace	nothing
672, J. H. Caldwell & Co.	15
672, Gregg & Co. est	20
672, Clark & Collins	20
672, N. F. Clark & Co.	25
680, John McKeown, No. 1	10
680, Arters & Co., est	15
681, M. Murphy, No. 1	50
697, Hopkins & Co.	5
Wells	108
Production	3077
Dry	2
Producing nothing	30

FOREST.

Williamson, McKinney & Co.	25
Cooper tract, Shannon & Co.	30
Tract 5,236, Kelly & Grandin	30
" 5,210, Grove, Hart & Co	dry

CLARENDON.

Lot 78, W. Beaty	10

MISCELLANEOUS.

Warrant 5,548, Marc & Falconer	dry
" 3,064, Ward & Hutchinson	dry
Wells	7
Production	95
Dry	3

THE LOWER FIELD.

CLARION.

Richey, Richey & Co.	10

BUTLER.

Shorts, Baldridge Oil Co.	dry
Weber "	dry
Gruber, Forest Oil Co. & Jennings	5
Kaltebaugh, "	7
Dixon, Phillips	dry
McCalmont, Phillips	dry
Brown, Union Oil Co.	dry
Wells	8
Production	22
Dry	5

CLARENDON.

Lot 496, W. Beatty	rig
498, Crowell & Estep	rig
498, Hopewell & Payne	rig
498, F. Pratt & Co.	rig
528, Beaumont & Drake	rig
161, Unknown	100
162, C. Verback	200

SHEFFIELD.

Lot 212, Truby & Allen	400
Williamson, J. L. McKinney & Co., No. 2,	rig bldg
Henry's Mills, H. B. Porter, shut down	sand
Tract 2735, Reno Oil Co	rig bldg
" " Patterson & Co	rig bldg
" " Clark & Foster	1600

FOREST.

Cooper Tract, Anchor Oil Co., div. C	700
" " Morck & Shultz	rig bldg
Tract 1393, Murphy & Co.	rig
" 3142, Morck & Falconer	rig bldg
J. Cornwall	1000
Watson, Hancock & Co.	rig
Tract 4821, Balltown Oil Co	rig
" 524, Grove, Hart & Co	rig bldg
Whig Hill, McKeon, Benton & Co.	rig bldg
Fox estate, Morck & Shultz.	800
Stewart, W. B. Ash & Co	50
Cook, Pennypacker & Lesher	rig
Drilling	9
Rigs	16

MISCELLANEOUS.

Russellburg, Ed. Wightman, shut down	sand
King's Hollow, Marsh & Brown	rig
Highlands twp., Elk County, Hallock Bros. & Johnson	800
Tylersburg, Williams et al	1800
Chapel Fork, Unknown	drilling
Drilling	4
Rigs	1

LOWER FIELD.

CLARION.

Carr Furnace, Guffy & Beardsly.	800

BYRON CENTRE.

Miller Farm, Adams & Story	900

BUTLER.

Manhood, Baldridge Oil Co.	1500
Heckert, "	rig
Hoffman, "	rig
Renfrew, Forest Oil Co. & Jennings	800
Dodds, "	800
Slayton, "	rig
Huselton, "	300
Plaisted, "	rig
McJunkins, Phillips Bros.	1200
Crowe, "	rig
Mahood, John S. Campbell	600
Duffy, McConnell & Co.	rig
Drilling	8
Rigs.	6

DRILLING WELLS.

BRADFORD FIELD.

EAST BRANCH.

Lot.	*Operator.*	*Depth.*
Scott, Abbott & McGinnis		rig
Clapp, J. M. Clapp, No. 22		200
Morris, Emery Oil Co., No. 42		1200
" " " 43		300
" " " 44		300
" " " 45		rig
" " " 46		rig
" " " 47		rig
Tibbetts, " " 9		sand

QUINTUPLE.

Lot 19,	E. K. West	rig
25,	J. S. Wilson	rig
50,	B. F. Brinton, fishing	1200
163,	Chemung Oil Co., No. 3	1200
163,	" " 4	rig
175,	D. Atwater & Co.	rig
176,	H. A. Booth & Co.	rig
202,	Butler & Martin	rig
203,	"	rig
260,	E. T. Howes	rig

BIG SHANTY.

Dent lands,	P. C. L. & P. Co	2 rigs
"	Whitney & Wheeler No. 16	1800
"	" " 17	1200
"	" " 18	800
Moody, Minard Run Oil Co.	" 60	sand
"	" " 61	rig bldg
Bingham, Fertig & Henne, No. 9		rig
Sullivan, Mills & Mullin		rig
Lot 188,	Bingham, John McKeon, No. 8	drilling

Drilling	12
Rigs	17
Total,	29

KENDALL CREEK.

Storms, Wright & Sowers	rig
Kilbury, Kilbury & Williams	500
Dodge, Dodge & Clark	rig
Ledom, Robert Gregg	rig

FOSTER BROOK.

Willets, I. Willets		1000
" "		rig
Cronan, J. McMurray & Co.		rig
E. T. Co., F. W. Mitchell & Co., No. 4		rig
Lynch, Lynch & McMurray		rig
Childs, O. A. Childs & Co.		rig

COLE CREEK.

G. & Van V. pur,	Union Oil Co. No. 25	rig
" " "	26	rig
Lot 399,	Forest Oil Co., No. 28	rig
389,	" " 29	rig
405,	" " 9	rig
409,	" " 10	rig
394,	P. T. & W. C. Kennedy, No. 8	rig
394,	" " 9	rig
416,	Lee & Apple, No. 4	rig
416,	" " 8	rig
416,	" " 9	rig
424,	Forman & Union Oil Co., No. 20	rig
492,	Johnson & Union Oil Co., No. 39b	rig
492,	" " 46b	500
439,	J. L. McKinney & Co. No. 24	800
537,	Geo. V. Forman	200
549,	"	200

OIL VALLEY.

Fullerton, Angell Oil Co.	4 rigs
Knapps, "	4 rigs

INDIAN CREEK.

Miles Loup, Hart & Hicks, No. 22	rig
Barse, J. D. Downing	rig
" Bussell & Urquhart	rig
L. Loup, Follett Bros	3 rigs
Keyes, Indian Creek Oil Co.	rig
Dodge, Frank Hardwick	rig

FOUR MILE.

Van Campen, Geo. Van Campen, Sr.	rig
Shattuck, Waco Oil Co	4 rigs

Drilling	6
Rigs	42
Total	48

GENESEE.

Lot 7,	I. E. Dean	2 rigs
7,	McCalmont Oil Co., No. 3	100
7,	"	4 rigs
8,	Isaac Willets, No. 27	1000
8,	St. Joe Oil Co.	rig
8,	Herrington & Ramsey	300
8,	"	rig bldg
8,	McDougall Oil Co. No. 24	200
8,	" " 25	rig
8,	" " 26	rig
8,	" " 27	rig bldg
16,	Laney Bros.	600
16,	D. W. Canfield	100
16,	G. S. Bussell	rig
21,	Willets & Cranston	rig
23,	M. Hughes	rig
23,	Willets & Cranston	sand
24,	"	sand
24,	R. R. Armor	2 rigs
24,	Daggett Oil Co. No. 23	rig
24,	Barton & Hammond, No. 5	rig
24,	Book & Gartland, No. 4	200
24,	" " 5	rig
24,	William Haldeman, No. 5	600
24,	" " 6	300
24,	" " 7	rig
24,	" " 8	rig
24,	Capt. W. P. McCleary	rig bldg
24,	Childs	rig bldg
29,	Willets & Cranston	rig
30,	Deutcher & Dix	rig
32,	Lavens & Co.	rig

Drilling	11
Rigs	27

WARREN DISTRICT.

CHERRY GROVE.

Lot 589,	Wilcox Oil Co., No. 2	rig bldg
589,	" " 3	rig bldg
590,	Mehoopany Oil Co., No. 5	rig
590,	" " 6	rig bldg
610,	Barnsdall Bros.	rig
610,	Broder Oil Co.	1200
610,	Minard Run Oil Co.	sand
611,	Forest Oil Co., No. 11	sand
611,	" " 12	rig
612,	Wilcox Oil Co.	sand
612,	John Galey	rig
618,	C. K. Book, No. 4	800
618,	Conrath & Co.	rig
618,	Union Oil Co.	1000
618,	John Galey, shut down	100
636,	Rix, Pemberton & Co., div. 15	rig
636,	Winger Bros., div. 23	400
645,	Rockland Oil Co., No. 4	rig
646,	Union Oil Co., No. 13	1000
646,	J. W. Humphrey	rig
646,	George Pease, No. 2	1200
646,	Kennedy Oil Co., No. 6	1500
647,	Anchor Oil Co., No. 9	1000
647,	" " 19	400
647,	" " 23	1100
648,	Green & Black	rig
650,	Baker & Co.	drilling
657,	McKinney & Co., div. 14	1400
658,	Anderson Bros. & Co., fishing	1400
658,	Jennings & Payne, div. 5	900
658,	" " 8	rig
659,	J. T. Johnson	rig
659,	Pratt & Co.	200
671,	R. E. Green, No. 4	1200
671,	" " 17	100
672,	Glass Bros. & Co., div. 4	1000
672,	Duke & Harris, div. 14	1500
672,	Christie & Stafford, div. 17	sand
672,	Taylor & White, div. 19	200
672,	J. E. Butler	400
672,	Stafford & Co.	1200
672,	L. C. Stanford, div. 31	1000
672,	E. Mullin, Jr.	sand
672,	J. O. Johnson	200
673,	Murphy & Co.	rig
680,	John McKeon, No. 2	650
680,	" " 3	1300
680,	Thompson & Potter, No. 1	1000
680,	" " 2	800
680,	" " 3	450
680,	Stafford & Christy	1200
680,	W. C. Curtis	100
680,	Logan & Co.	350
680,	"	rig
680,	Deadwood Oil Co.	700
681,	M. Murphy, No. 2	1200
681,	" " 3	800
681,	" " 4	600
681,	J. R. Goldsborough	rig
681,	Union Oil Co.	rig
681,	N. F. Clark & Co., No. 2	600
681,	" " 3	700
697,	Union Oil Co.	2 rigs bldg
722,	J. Galey & Co.	rig bldg

Drilling	45
Rigs	21
Total	66

ALLEGANY FIELD.

ALMA.

Lot 1,	A. Jackson	rig
2,	Morse & Hardison	rig
17,	Scott & Elliott, shut down	800
17,	Lewis & Co	rig
18,	G. M. Barney	rig
18,	Mrs. O. P. Taylor, No. 2	300
22-38, 40,	Duke & Norton Oil Co	3 rigs
38,	" No. 28	800
23,	Anderson & Otis	2 rigs
24,	Jones, shut down	600
38,	Snow & Co	rig
54,	Durkee, Young & Co	rig
69,	Baker & Co.	rig
143,	Bush & Cole	sand
143,	McCoy & Weter	1400
143,	I. W. Shirley	drilling

Drilling	7
Rigs	12

BOLIVAR.

Lot 6,	Star Oil Co	rig
6,	Penzer & Love	rig
24,	Taylor & Co	rig
31,	Forman & Ballard	rig
32,	Wm. Sawyer, No. 8	100
32,	C. H. Coffin	2 rigs
37,	Parker & Co	rig
37,	Sample & Solly	sand
37,	"	rig
38,	Oil Well Supply Co	600
38,	Curtis & Williams	350
38,	Geary, Hanley & O'Shay	rig
39,	Capt. Stevens	rig
30,	O'Neil & Co	100
39,	M. A. Smith & Co	400
40,	Meldrum Oil Co	rig
45,	Forman & Franchot Bros	400
45,	"	1000
45,	"	rig
45,	Bartlett & Foote	400
45,	Nutting & Co	rig bldg
46,	Weiser Bros	600
46,	Chauncy Oil Co., No. 6	350
46,	" 7	rig bldg
46,	Clark & Davis	600
63,	Northup & Co	sand
63,	"	rig bldg
64,	Thompson & Huver	rig

Drilling	13
Rigs	16

WIRT.

Lot 17,	Taylor & Humphrey, No. 6	rig
17,	" 7	rig
25,	Hazelwood Oil Co	2 rigs
28,	Pitt & Co	sand
33,	Taylor & Allen, No. 11	rig
33,	Wellman & Fuller	rig
33,	Wallace & Co.	rig
41,	Coast & Rice, No. 3	500
41,	" 4	rig
41,	Wellman, Miner & Pitts	rig
49,	Coast & Rice, No. 11	200
54,	Dow & Co	400
—,	Wheeler farm, Root & Co	rig

Drilling	4
Rigs	9

CLARKSVILLE.

Lot 17,	Ceres Oil Co	sand
17,	William Cranston	rig
17,	Huston & Brecht	rig bldg
17,	Bunnell	600
19,	Pratt & Fink	sand

SCIO.

Lot 2,	Morse & Hardison	rig
2,	Nameless Oil Co.	rig
3,	Morrison & Lattimer	200

Drilling,	4
Rigs,	2

SUMMARY.

Wells Completed.

Section.	*No. of Wells.*	*Barrels.*	*Average.*	*Dry.*
East Branch	.	.	.	.
West Branch				
Quintuple				
Foster Brook				
Kendall Creek	.	.	.	.
Oil Valley				
Indian Creek				
Big Shanty				
Cole Creek & Bingham	13	170	.	.
Kinzua, all Dists.				
Totals	13	170	.	.

ALLEGANY FIELD.

Alma	2	15	.	1
Bolivar	11	175	.	.
Wirt	4	55	.	.
Genesee	11	195	.	.
Clarksville				
Scio	1	.	.	1
Totals	29	435	.	3

WARREN.

Cherry Grove	108	3,077	.	2
Clarendon	7	95	.	3
Sheffield				
Miscellaneous				
Totals	115	3,172	.	5
Lower Country	8	22	.	5
Grand totals	165	3,799	.	13

SUMMARY.

Drilling Wells.

Section.	*Drill.*	*Rigs.*	*Total.*
East Branch, West Branch, Quintuple	12	17	39
Kendall Creek, Foster Brook, Cole Creek	.	.	.
Oil Valley, Indian Creek, Four Mile, Kinzua	6	22	48
Dew Drop, Cole Creek, Big Shanty	.	.	.
Totals	18	59	77

ALLEGANY.

Alma, Bolivar	20	18	38
Wirt, Genesee, Clarksville	.	.	.
Scio, Miscellaneous	29	40	69
Totals	49	58	107

WARREN.

Cherry Grove	45	21	66
Clarendon, Miscellaneous, Sheffield, Forest	33	17	30
Lower Country	8	6	14
Bradford	18	59	77
Allegany	39	58	97
Grand totals	123	161	284

RUSSIAN PETROLEUM.

THE BIGGEST LEASE ON RECORD.

MR. WILLIAM MASON who, with L. D. Galligan, of Tidioute, and N. G. Thruby, of Pittsburgh, spent one year in the Russian oil field, has been in Bradford for a few weeks. He informed the AGE of the condition of the petroleum business in that part of the Russian field bordering on the Black Sea. The three gentlemen went there in September, 1881, by request of a company, composed of French capitalists, under the significant title of *Standard Russe Compagnie de Petroles*, which in common English would simply mean the Standard Petroleum Company of Russia. This company, however, has no connection whatever with the Standard Oil Company of America. Its operations are confined to a strip of territory lying fifty-two miles from the north coast of the Black Sea, and about 300 miles east of Odessa, bearing a few degrees south. There are in the latitude about twenty producing wells, which yield daily about 250 barrels of oil, and it was for the purpose of constructing a pipe-line from these wells to the coast that the services of the three gentlemen named were secured by the company aforesaid. The work was completed last June, and before the trio left the country 15,000 barrels of oil had been transported to the seaboard city, Hobopocck—or, in English, Novorissisk. The company had become involved in difficulty with its representative who had been instrumental in its organization, Dr. Tweddle, who is an American, and formerly a citizen of Pittsburgh, Pa.

It appears, as stated by Mr. Mason, that a Russian, by name Novorisell, first conceived the idea of developing the resources of that particular section, and to that end enlisted the financial aid of the Parisian capitalists who afterwards constituted the company above named. Novorisell, however, made poor headway. He incurred an outlay of a few hundred thousand dollars with but little to show for it. About this time Dr. Tweddle appeared on the scene, and having had some experience in Pennsylvania, together with an insight into the workings of the Standard Oil Company, and being possessed of pleasant address, was just the man to put matters in a brilliant light before the Parisian gentlemen. He informed them of his plan for conducting a campaign in the land of the Russos. This was to lease from the government the oil and mineral right of all the territory embraced in an area having for its longitude 100 miles, and for its latitude fifty miles, which would constitute the biggest lease on record. This would cover all the territory that exhibited symptoms of a grecious character. The symptoms, or surface indications, consisted of emissions from the surface of gas and small quantities of petroleum.

Tweddle's idea of conducting the business sounded quite pleasingly to the Frenchmen, who at once organized a company with a capital of several hundred thousand francs, and elected Tweddle to supreme dictatorship, or superintendency, of the company's affairs. He was sent with full authority to act for the company in leasing the land from the government, who owns it all. The original idea was carried out to the letter. The land was secured and so reported to the company at Paris. New wells were drilled, and the next move was to construct a pipe-line to convey the oil to the market. As stated above, this was accomplished in July last.

But the company, none of the members of which—except Dr. Tweddle—had yet visited the scene of operations, began to grow uneasy over the constant strain upon their treasury by their Russian superintendent. Consequently, it was concluded to investigate, and a couple of representatives were sent out for that purpose. On arriving at the scene they found Dr. Tweddle in full possession of all the property, the title to which he had secured in his own name, and apparently for the benefit of "himself, his heirs and as-

signs." The doctor, when interrogated regarding circumstances, not having the fear of the fate of Boss Tweed before his optics, merely made answer by the use of the familiar "what are you going to do about it?" This is the condition of things as they stand to-day, though it is probable before this time application has been made to the proper tribunal to force Tweddle to a compromise at least.

The wells in that section are sunk to a depth of 300 feet on the lowlands, and pipe has to be driven all the way. There is no rock, though the formation from which the oil is abstracted consists of a species of sandy clay. The sand, when washed, resembles the oil-sand of McKean County, Penn., but it is in no instance of sufficient solidity to be capable of the title of rock.

At the depth of 150 feet a fine lubricating oil is obtained, having a gravity of from sixteen to twenty degrees.

The country is inhabited by Cossacks, who dwell in villages of from 2,000 to 10,000 inhabitants. The land being all owned by the government, these villagers go out during tilling season and take possession of any unoccupied lands and work them. The villages are from ten to twenty miles apart, and between them there are no dwellings except such as laborers erect for their convenience while performing the tasks of the "farm."

Mr. Mason is of opinion that there is considerable oil in that part of the world when properly drilled. The oil is of an inferior grade as compared with the American product, rendering only sixty per cent. of illuminating oil against eighty or eighty-five per cent. of the latter. He did not visit Baku, which is 500 miles southeast of the Tweddle lease. At Baku it is claimed that 14,000 barrels a day are produced, but it is as yet impossible to get it to market, and much of it is permitted to go to waste!

Dr. HALDEMAN, of Cleveland, Ohio, possesses a warrant of Forest County land, which he purchased during the Fagundas excitement in 1870. It is situated northeast of Hickory Station. The doctor thinks of testing the territory next summer after oil has reached the $2.00 point.

THE suit of E. G. Patterson vs. the Tidewater Pipe Line, for a permanent injunction restraining the company from extending its operations, has been decided by the Court of Crawford County in favor of the defendant.

HEAVY OIL REPORT FOR SEPT., 1882.

THE operations in the Franklin heavy oil district for the month of September show about the same activity as during August, when twenty-one new wells and three dry holes were completed, with a production of thirty-one and a quarter barrels.

WELLS COMPLETED.

Farm.	*Operator.*	*Product.*
Frank,	Casper Frank	3
Kunkel-Newhouse,	Galbraith & Co	3
do	Sheasley & Grant	3
Kunkel,	Sheasley & Grant	3
Mooney,	Mitchell & Galbraith	dry
Fitzgerald,	Allen & Co	1
Shippen,	E. W. Shippen	2
Point,	W. W. Duffield	½
do	E. Rial & Son	2
do	D. T. Lane & Son	½
do	L. Wineman	¼
I. Phillips,	J. Sheasley	2
Evans,	D. Grimm	1
Kelly,	W. S. McMullen	dry
Galloway,	Hurley & Smith	1
do	H. C. Shaw	1
do	Mattern & Co	1½
do	H. F. James	1
do	C. E. Smith	1
do	do	1
Algeo,	J. & T. Algeo	1
Gillingham,	W. T. Baum	1½
	Production	30¼
	Wells	22
	Dry	2
	Average	1⅜

DRILLING OPERATIONS.

Farm.	*Operator.*	*Depth.*
Gillingham,	J. H. Cain	200
do	W. T. Baum	sand
Fitzgerald,	Allen & Co.	sand
do	do	rig building
Laub,	C. E. Smith	sand
Cooley,	Stock Bros	200
Point,	D. Grimm	rig up
Toomey,	J. Sheasley	rig building
Frank,	C. Frank	sand
Newhouse-Kunkel,	Galbraith & Co	rig building
Kunkel,	J. W. Grant	250
Mooney,	Mitchell & Galbraith	rig building
Phœnix,	Mitchel & Galbraith	200
Van Vant,	J. H. Lee & Co	rig building
Stocker,	H. McClintock	spudding
First Ward,	Crawford & Co	200
Kelly,	W. S. McMullen	100
Evans,	D. Grimm	rig up
Fee-Kunkel,	E. D. Yates	rig building
Galloway,	Hurley & Smith	100
do	do	rig building
do	Crawford & Co	300
do	Mattern & Co	rig up
do	Mattern Bros., & Swan	300
do	John Bracken	rig up
do	Joseph Shaffer	200
do	Riesenman & Co	rig up
do	Weikal & Grimm	500
do	Fitzgerald & Co	rig up
do	Dunmire & Moffett	spudding
do	C. E. Smith	rig up
do	do	rig up
Dubbs,	Elliott Bros	rig up
Dale & Irwin,	James Dibben	rig up
	Drilling	13
	Rigs	17
	In the sand	4
	Total	34

PRODUCTION TABLE.

SHOWING THE TOTAL DAILY NET YIELD OF THE PENNSYLVANIA OIL FIELD FROM SEPTEMBER 1859, TO AUGUST 31ST, 1882, IN BARRELS OF 42 GALLONS EACH.

Years.	Jan.	Feb.	Mar.	April.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.	Totals.
1859	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	10	15	18	28	2,173
1860	30	50	89	215	500	1,000	2,000	2,500	3,000	3,500	2,000	3,000	547,439
1861	3,201	4,041	4,800	5,400	6,000	6,100	7,100	8,500	7,000	5,150	5,514	6,716	2,119,045
1862	6,000	5,300	7,400	8,000	9,400	9,000	8,500	11,000	13,000	10,565	8,053	7,238	3,153,183
1863	6,200	6,400	7,000	5,500	6,000	7,603	7,022	8,100	9,200	7,120	9,500	10,260	2,667,543
1864	8,100	6,300	4,500	5,000	7,000	5,100	5,600	5,700	7,180	5,545	10,100	10,320	2,215,150
1865	5,900	5,800	5,000	7,500	8,000	8,000	7,400	6,350	6,400	6,800	7,600	9,350	2,560,200
1866	9,200	9,100	5,000	7,100	8,100	9,500	9,350	9,440	12,000	10,400	11,000	11,165	3,385,105
1867	10,900	8,100	9,000	10.100	10,500	9,000	10,100	10,000	10,100	7,660	9,155	8,313	3,458,113
1868	8,200	9,400	8,100	9,300	11,000	12,400	13,000	11,800	10,250	8,225	7,580	7,150	3,540,670
1869	8,100	8,500	10,000	11,000	13,000	13,000	13,560	13,000	13,500	12,500	11,200	10,625	4,186,475
1870	11,348	11,802	11,509	12,400	15,990	13,400	13,800	15,950	18,203	18,000	17,061	15,990	5,308,046
1871	13,500	13,300	13,082	12,950	13,054	13,882	14,900	15,866	15,555	15,889	15,599	15,841	5,278,072
1872	17,943	17,894	15,680	16,221	17,402	12,140	16,933	17,440	16,598	18,450	25,942	20,630	6,505,774
1873	20,550	21,460	21,830	22,260	24,632	26,361	23,406	30,900	32,500	31,343	33,584	34,680	9,849,508
1874	32,800	30,940	29,760	28,104	29,442	31,222	33,987	32,000	29,461	29,944	29,231	28,101	11,102,114
1875	27,900	26,509	26,012	23,009	23,000	23,805	24,991	23,940	23,800	23,900	23,821	23,594	8,948,749
1876	23,102	25,440	23,560	23,800	24,628	24,400	24,890	25,300	25,900	26,400	26,500	25,900	9,142,940
1877	26,930	27,560	28,860	32,060	36,000	37,440	39,210	42,100	41,321	41,200	39,900	40,120	13,230,330
1878	39,200	39,900	39,200	40,100	41,111	40,820	41,200	42,900	43,999	44,480	45,200	43,900	15,272,491
1879	44,000	43,830	47,960	50,810	52,911	55,600	56,911	59,940	61,498	60,980	58,750	58,231	19,835,903
1880	59,982	63,890	66,215	68,063	72,080	73,104	73,794	74,980	71,941	77,491	76,112	74,080	26,086,692
1881	73,030	69,060	73,900	75,245	79,000	82,460	81,900	79,100	78,231	77,971	77,892	76,642	28,136,353
1882	75,028	74,910	74,751	76,690	78,601	80,469	90,020	98,739	79,685	. . .	. . .	. . .	. . .
Total twenty-three years to December 31st, 1881,													186,532,067

WELLS COMPLETED.

TOTAL NUMBER WELLS COMPLETED EACH MONTH IN THE YEARS NAMED.

A. D.	Jan.	Feb.	March.	April.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.	Total.
1870	131	131	114	135	164	182	161	156	135	144	112	79	1,644
1871	98	68	70	81	95	150	139	116	125	186	161	181	1,470
1872	48	118	98	122	130	98	131	117	96	101	41	101	1,201
1873	100	105	105	110	106	180	112	116	116	111	108	95	1,364
1874	108	111	108	110	112	113	124	102	108	117	112	116	1,341
1875	184	186	194	180	169	194	208	206	208	215	213	228	2,385
1876	235	236	248	207	200	258	243	274	223	270	278	271	2,943
1877	275	249	296	264	336	598	314	254	332	460	398	391	4,167
1878	279	238	202	411	468	278	210	180	176	232	241	160	3,075
1879	144	136	221	263	395	336	335	280	269	229	225	268	3,101
1880	311	238	358	494	435	315	339	359	359	360	334	309	4,211
1881	232	218	201	310	412	371	348	335	314	302	347	405	3,795
1882	357	359	389	449	457	328	188	248	169	. . .	. . .	. . .	. . .

THE CREDIT SYSTEM.

A PAPER stated not long since that a man's worst enemy may be the man who is readiest to grant him favors. This sounds paradoxical, but nevertheless it is often true. Of its truth no better example need be looked for than in the case of individuals or firms who allow themselves to be cajoled into accepting more credit, in the way of purchases, than is good for them. Nor need anything in this view militate against the wisdom or expediency of using a moderate credit in a moderate way; but the difficulty is, mere character is often given too much weight in establishing credit. That a man, whose character for uprightness indicates him as a man who can be trusted in a monetary way, is a better or safer debtor than one of a different class, no one will dispute. But uprightness of character alone will not make two dollars of assets pay three dollars of debts. And the man or firm who leaves the uncertainties of life and the fallibilities of judgment out of the account in making debts, too often comes to a realizing sense of the impossibility of just that thing.

In the old days, before railroads were introduced, before the telegraph or telephone was thought of, when daily papers were few or feeble, and when the machinery of exchange, as well as the machinery of thought, existed in an embryo condition, or not at all, credit within certain limits was in great measure a necessity. Many a

man of good character, good ability and sound judgment was, in those days, by the wise use of credit, enabled to establish business, which would have been impossible upon his own unaided means, and many are still doing it. But the changed conditions under which we live too often render such aid more grateful to the imagination than healthy for the purse.

Again, strong competition in the wholesale trade and among manufacturers often tends to enlarge the credit system. This is particularly true of the oil business, and to this may be ascribed all the calamities that have befallen the trade of late years. By it production has been raised far above the wants of the world, and, as a consequence, prices for the product have ruled at times far below the paying point. It is a fact, unexplainable, that a man entering the oil business will obtain a greater amount of credit upon the smallest amount of capital of any business he can engage in. For a few years it worked admirably in the Bradford field, as it gave hundreds of poor men a chance to cope in a large measure with the capitalists; but, in the end, its pernicious influences were the cause of serious results to the masses. It still continues, but not to the extent of former times, which is a tolerably favorable omen.

THE REAL ESTATE MARKET.

BUT little can be said at this writing upon this subject. Values have been increased to such a pitch that but few sales are recorded. Buyers do not care to invest at the prices asked, and holders of property, in all parts of the field, are apparently well satisfied to retain their possessions under existing circumstances. Small wells, which two months ago would not bring more than from $500 to $800 each, are not offered at present, the owners believing that a further advance in the price of oil is imminent, in which case the value of their production, however small, would be materially enhanced. In the Bradford district, perhaps, not more than a dozen transactions have taken place since the first week of September, and the total value of all would not exceed $75,000.

In Allegany there have been a greater number of sales than in Bradford, though as compared with like periods before the opening of Cherry Grove the list for the month is very limited, indeed. A total of transactions exhibits a business of $75,000 in this direction since the advance in oil began.

In Warren and Forest the count shows only about half a dozen transactions valued at less than $40,000.

Production in all parts is held at $300 a barrel net. That is, a 10-barrel well, free of royalty, is held for three thousand dollars, though where unfavorable surroundings exist there is a disposition to trade on more satisfactory terms to the purchaser.

Wells in Cherry Grove, however, are not considered of equal value with similar producers of other sections and we hear of offerings at rates considerably reduced. This, of course, is owing to the extraordinary outlay incurred in forcing the wells to yield at all. Until some plan is devised, therefore, for resuscitation it is not very probable that transactions in properties of this class will be numerous. It is, moreover, safe to assert that values have arisen throughout the entire field fully 50 per cent. during the month, and producers are likewise 50 per cent. better off than they were at the beginning of the period. It was estimated that the value of oil stocks and general producing property was reduced by the strike of 646 about thirty millions of dollars; but this reduction or depreciation was only temporary, and was entirely of a fictitious character. All stock value has been restored to the condition maintained prior to the commencement of the decline and has even passed to a more elevated scale.

SEPTEMBER SALES AND RUNS.

FOLLOWING is a summary of the sales of oil at the Bradford, Oil City, Pittsburgh and New-York Oil Exchanges during the month of August. Nothing less than 1,000 barrel certificate ever sold; each barrel represents forty-two gallons:

	BRADFORD.	PITTSBURGH.	OIL CITY.	NEW-YORK.
January,	23,885,000	11,441,000	27,163,000	
February,	19,412,000	9,153,000	22,207,000	
March,	27,467,000	13,208,000	29,448,000	
April,	22,245,000	8,325,000	19,171,000	15,000,000
May,	39,777,000	21,814,000	38,402,000	35,000,000
June,	29,969,000	20,417,000	38,127,000	21,000,000
July,	48,736,000	22,040,000	31,536,000	22,400,000
August,	34,494,000	16,140,000	50,000,000	20,000,000
September,	113,402,000	67,220,000	156,450,000	48,500,000

Average runs and shipments each month of year to August 31st:

	Total Daily Runs.	Bradford Daily Runs.	Total Daily Shipm'ts.	Bradford Shipm'ts.	Charters.
January,	70,401	62,229	55,798	40,864	33,877
February,	81,853	72,825	63,062	47,183	43,075
March,	81,186	65,758	53,489	38,963	41,080
April,	80,158	67,392	54,413	35,662	35,453
May,	83,397	75,472	56,478	43,329	47,220
June,	89,103	78,701	65,266	47,980	54,829
July,	87,948	65,445	61,779	41,013	34,213
August,	111,243	70,646	66,046	42,500	. . .
September,	96,079	64,608	66,220	42,000	40,000

THE OIL SITUATION.

WHEN the September AGE was printed, oil was commanding only about sixty-five cents a barrel. To-day, October 13th, it ranges from ninety-four to ninety-six cents a barrel, with favorable and promising strength. The advance into the nineties is most certainly permanent from all appearances in the field of production. A most remarkable decline has occurred in the latter during the past thirty or forty days. On the 10th of September, Cherry Grove was estimated to be doing in the neighborhood of 25,000 barrels a day, having at that time declined 13,000 from its supposed highest point. As shown by our Garfield correspondent, whose statements are as reliable as any other man's on the face of the earth, the yield of the 8th instant was only 5,900 barrels per diem, with 102 wells shut down, or, as he states, "being doctored." But allowing a similar average production for the 102 shut down to those producing, and we have then a total of less than 8,000 barrels a day, a falling off during the month of 17,000 barrels. Of course the pipe line runs have been maintained at a tolerably high rate, owing to the fact that the accumulated stocks at the wells of the months previous have been drawn upon. These, however, have become of such moderate dimensions that the pipe line gauges for next month will furnish all the information desired regarding the average output of the famous section.

We, therefore, regard Cherry Grove as having enacted its part in the control of the oil market. The other sections of Warren and Forest are to have something to do, it must be admitted by all, in shaping the destiny of prices. But, as they have showed their hands, and are unable to play the Cherry Grove trump, or even a better card than Clarendon or Sheffield have played, they do not cause much alarm to the holders of large stocks of oil. Then, moreover, all the older districts are gradually weakening, and not only weakening, but declining quite rapidly. Nor does there appear a probability that this constant depreciation can be checked. In Allegany there *is* such a possibility when the total yield shall have declined to ten or twelve thousand barrels a day, as her border territory offers room for perhaps 350 more wells, which, no doubt, will be drilled at some future time. The same is true of the Bradford field to a certain extent. There are yet fully 5,000 acres to drill on her outskirts, including the Sugar Run and Kinzua sections. But what of that? The 5,000 acres furnish room for just 1,000 new wells, whose aggregate yield at the age of thirty days could not be placed above 8,000 barrels daily. At the rate at which wells will be sunk hereafter in this district, it will require from one to two years to complete the alleged thousand. At that time the old wells, or the old field as it now stands, will have declined to 18,000 barrels, figuring the moderate drop of two barrels each to the 11,000 wells that are producing at the present time. To this add the 8,000 from the supposed new wells, and we have a total of about 26,000 barrels as the highest possible point for Bradford's production at the end of 1883. Deprived of fresh additions to the producing area, Allegany must follow Bradford's suit.

What, therefore, is to be assumed as the proper position of petroleum during the year to come? It does not promise to repeat the conditions of 1876, when the $5.00-a-barrel boom struck the region, though no one could doubt such a possibility. But, while thirty-two millions of barrels remain in store, upon a portion of which $12.50 is paid monthly on each thousand barrels, as a storage charge, together with the fact that there is always a possibility of the discovery of a fresh deposit in some corner of the oil universe, the conditions do not compare favorably with those of 1876. However, on the other hand, there is the constant increase in consumption staring the trade in the face and causing the bear element in the market to shudder, sometimes, at its own recklessness. Deprived of new and comparatively rich fields, something after the make-up of the Bradford or Allegany districts, it would seem next to a miracle to have prices remain below a dollar. At the present time the total daily yield does not exceed the actual consumption 3,000 barrels, and the ends are coming together with a rapidity so great that, unless some unforeseen agency interferes, they must meet during the month of November. Stocks after that time should be drawn upon when the market value should seek a level far above even the dollar mark. Of course the producer is always more or less indebted to the speculator for any advance in values that may occur beyond the legitimate worth of the article, and it is not among the impossibilities, as stated above, for scenes similar to those of 1876 to be enacted. Such results, however, should not be looked for, or expected. But a steady upward movement must ensue providing no important discoveries are made in the producing fields. It should be remembered, also, that a greater than an ordinary Warren County

spot will be required to answer such purpose. The outlook, therefore, is brighter and more promising than it has been at any time during the past four years, and fully as assuring as anticipated six months ago by the AGE, notwithstanding the fact that the great Cherry Grove comet appeared meanwhile and caused the greatest scare the trade has felt since the overflow of Butler County. It is frequently urged as an opposing argument that Russia, or Germany, or Italy, or India, or some other foreign "district," possesses immense stores of petroleum that are to burst forth some day and deluge the whole of Europe, thus cutting off our large and valuable trade there. But such arguments are founded, as a rule, on mere assumption, and are used only for the effects they may produce for the time being. No person thoroughly posted in the condition of petroleum supplies abroad retains any fears of the results of foreign competition. It is true Russia produces considerable oil — perhaps 12,000 barrels a day — but Russia, it should be remembered, has been in the producing business for many years; to even as great an extent as it is at the present time. It does not properly market that which it now produces, and it could not compete in some of the cities of its own dominions with the American article. The question, therefore, of foreign competition, is one that should be laid on the shelf for the present, at least. The only serious drawback that the trade is afflicted with now is the enormous rates paid for storage, which amounts to about $3,731,244 annually. In another column this subject is treated fully.

Since writing the above, stock gauges have been received. On another page will be found the regular production table which gives the average as deduced from facts and figures obtained for the month ended on the 30th of September, 79,735 barrels per day. Since it required a terrible fall to secure this average against 98,739 for August, the yield on the first inst. was very much less than 79,000. According to the calculation of the 10th, which we always make, the yield by districts in round numbers was about as follows:

Bradford,	39,800
Allegany,	16,000
Cherry Grove,	6,100
Outside,	9,700
Total,	71,600

This would indicate the meeting point of production and consumption, to occur about on time, sometime in November, providing no important development transpires outside of the present producing fields. If the price of the article can be kept below one dollar a barrel in the face of such circumstances, it will be only because men of capital may still fear the unpleasant possibilities of the wild-catter. One favorable feature of the business is the fact that, instead of the producers hastening to drill even the territory that could be drilled at present, they are investing the means that would be absorbed in that direction in purchasing oil for an advance.

In the condition of the foreign trade there is but little change. Purchasers are not willing to advance prices, and our home refiners are not disposed to enter into contract for future delivery at the prices ruling for refined. The fear of a further advance in crude causes a kind of deadlock. At least this is the way matters stand at present—October 14th. It must be concluded, therefore, that the business looks extremely healthy at this writing, and that producers have little to fear from the results of the immediate future.

HOW IS IT?

To the Editor of the AGE,—How is it that the estimate of production usually made in the article entitled "The Oil Situation" does not agree with the figures for the month which appear in the regular production table? I find that the former makes the total very much less than the latter.

Respectfully,

J. S. W.

The above question is a very proper one; but if the propounder had carefully observed all the statements made by the AGE in this regard he would have found the answer to the problem. In reply, however, we will state that the figures which appear in the production table give the average production for the month. If, therefore, the production is 95,000 on the first day of the month, and averages only 80,000 for the whole period, it must certainly be considerably less on the last day than 80,000. There must be a constant decline. And if the decline is not checked, it will continue on down into the month which follows that for which the average is made. The estimate given in "The Oil Situation" is the production for that day. It is about one month farther down the stream of time than the regular table statement.

WELLS in some sections of the Allegany field have declined 25 per cent. in the past two months.

STATEMENT made by the United Pipe Lines July 10th, 1880, and enlarged to September 30, 1882. It gives gross stocks, sediment and surplus, net stocks, outstanding balances, receipts (or runs) from all sources, and total deliveries, or shipments:

	Gross Stocks.	Sediment and Surplus.	Net Stocks.	Outstanding Acceptances.	Credit Balances.	Receipts from all Sources.	Total Deliveries.
1877—April	1,895,153.71	77,386.70	1,817,767.01	449,640.14	1,368,126.87	200,570.81	125,797.90
May	1,762,602.64	75,363.87	1,687,237.77	663,663.71	1,003,574.06	493,200.58	619,612.26
June	1,596,367.68	81,255.42	1,488,112.26	661,786.57	826,325.69	538,906.95	737,609.77
July	1,482,433.51	81,741.50	1,400,692.01	667,166.36	733,625.65	615,145.46	699,476.18
August	1,489,052.53	81,144.63	1,407,907.90	643,281.46	764,626.44	673,403.04	666,144.28
September	1,339,032.27	67,163.68	1,271,868.59	552,676.26	719,192.33	625,225.37	769,745.57
October	1,434,728.78	46,771.99	1,387,956.79	673,850.05	714,106.74	687,094.59	570,092.71
November	1,691,399.52	39,418.00	1,651,981.52	657,591.36	994,390.16	913,644.19	649,242.70
December	2,830,413.36	68,729.63	2,761,685.73	754,338.25	2,007,347.48	1,656,150.37	506,332.99
1878—January	3,124,641.15	72,453.43	3,052,187.72	864,711.41	2,187,476.31	872,681.18	715,149.78
February	3,439,526.98	82,452.66	3,357,074.32	1,404,292.13	1,952,782.19	1,030,688.44	720,478.14
March	3,940,000.65	92,963.06	3,847,037.59	1,487,430.50	2,359,598.09	1,196,251.26	701,681.27
April	4,335,274.84	133,935.76	4,201,340.08	1,615,791.19	2,585,548.89	1,137,359.40	778,050.53
May	4,609,681.45	150,117.76	4,459,563.69	2,065,333.31	2,394,230.38	1,104,352.40	843,081.33
June	4,719,699.25	181,800.03	4,537,899.22	1,950,420.81	2,587,478.41	1,092,604.02	1,004,474.55
July	4,885,851.72	229,080.78	4,656,770.94	2,078,466.56	2,578,301.38	1,258,648.45	1,108,074.33
August	4,571,658.59	217,085.19	4,354,573.40	2,064,590.75	2,289,982.64	1,195,268.67	1,496,009.04
September	4,410,061.84	225,088.86	4,184,972.88	2,705,853.95	2,479,119.03	1,182,118.57	1,318,265.33
October	4,072,267.43	234,050.89	3,838,576.54	1,517,484.27	2,321,092.27	1,271,174.73	1,564,984.43
November	4,083,972.42	216,655.30	3,867,317.12	1,784,443.35	2,082,873.77	1,159,623.71	1,129,047.42
December	4,098,200.92	201,470.30	3,896,730.62	1,741,311.07	2,155,419.55	972,338.83	924,035.93
1879—January	4,759,031.41	182,707.80	4,576,323.61	2,153,763.83	2,422,559.78	1,231,237.19	546,271.74
February	5,157,646.15	171,689.80	4,985,956.35	2,346,238.22	2,639,718.13	1,055,377.95	643,828.71
March	5,503,768.71	190,797.91	5,312,970.80	2,484,861.83	2,828,088.87	1,363,512.17	1,029,029.70
April	5,885,675.24	211,957.06	5,673,718.18	2,644,301.36	3,029,416.82	1,379,349.76	1,015,482.04
May	6,180,843.53	315,992.98	5,864,850.55	2,522,846.36	3,342,364.19	1,488,514.31	2,228,043.27
June	6,426,802.45	334,457.29	6,992,345.16	2,959,921.12	3,132,424.04	1,437,250.90	1,204,557.54
July	6,419,699.08	323,295.32	6,096,403.76	2,323,575.29	2,772,828.47	1,472,651.01	1,465,518.05
August	6,380,606.63	300,345.15	6,078,261.48	3,581,224.03	2,497,037.45	1,714,620.11	1,728,940.81
September	6,589,859.83	325,363.85	6,264,995.98	3,783,480.38	2,481,015.60	1,691,863.41	1,455,811.45
October	6,701,209.87	299,393.67	6,401,816.20	3,788,155.65	2,613,660.55	1,646,725.06	1,502,991.20
November	6,951,133.67	303,641.17	6,647,492.50	3,927,300.18	2,675,192.32	1,600,961.29	1,328,621.19
December	7,362,409.76	294,571.37	7,067,838.39	4,235,459.40	2,832,378.99	1,771,781.24	1,331,822.12
1880—January	7,735,257.38	295,517.60	7,439,739.78	4,436,788.55	3,002,951.25	1,832,963.04	1,145,194.98
February	8,187,012.49	322,568.93	7,864,443.56	4,602,286.49	3,262,157.07	1,607,663.89	1,178,111.92
March	8,621,097.49	351,130.35	8,969,967.14	4,811,894.33	3,458,072.81	1,815,133.31	1,396,037.88
April	9,662,354.59	388,558.16	9,273,766.43	5,846,536.60	3,427,259.83	1,739,297.37	723,794.73
May	10,306,078.79	454,193.73	9,851,885.06	6,361,320.05	3,490,565.01	1,552,240.91	975,061.26
June	11,266,771.77	477,431.60	10,789,340.08	7,397,131.89	3,392,208.19	1,781,937.29	848,339.08
July	12,039,010.00	475,446.56	11,563,563.44	8,125,241.25	3,438,332.19	1,890,161.44	1,095,528.25
August	12,749,623.28	462,987.28	12,286,636.00	8,635,394.80	4,651,241.20	1,904,452.70	1,177,448.42
September	13,618,276.03	382,398.71	13,236,327.32	9,287,193.94	3,949,133.38	2,075,105.26	1,115,184.71
October	14,020,877.32	391,331.55	13,629,545.84	9,448,615.77	4,180,930.07	1,999,487.98	1,598,285.06
November	14,656,891.55	341,262.67	14,315,628.88	10,038,824.08	4,231,804.80	1,859,991.50	1,064,146.39
December	15,369,758.67	361,184.83	15,008,573.48	10,913,283.49	4,095,290.35	1,987,283.54	1,207,928.35
1881—January	16,291,307.87	360,688.98	15,930,618.89	11,672,583.61	4,258,035.28	1,876,526.50	931,818.71
February	17,355,485.31	391,616.47	16,936,868.84	12,029,594.35	4,934,274.49	1,823,713.46	781,745.93
March	18,488,476.94	432,304.19	18,056,172.75	13,099,262.44	4,956,910.31	2,222,812.39	1,116,695.11
April	19,560,752.23	517,422.38	19,043,329.85	13,846,285.20	5,197,044.65	2,182,636.96	1,183,779.02
May	20,591,177.33	640,662.03	19,950,455.30	14,608,124.70	5,342,330.60	2,278,582.78	1,356,688.23
June	21,397,698.53	756,412.85	20,641,285.68	14,738,828.77	5,902,456.91	2,318,445.18	1,545,448.13
July	21,982,161.42	774,402.94	21,207,758.48	15,150,267.23	6,057,131.25	2,396,472.50	1,756,044.15
August	22,474,105.51	800,343.43	21,673,762.18	15,240,553.15	6,433,209.03	2,527,888.69	2,013,844.67
September	22,727,740.61	820,434.43	21,907,306.18	15,626,283.11	6,281,023.07	2,233,085.37	1,900,251.83
October	23,212,951.99	801,243.43	22,431,708.56	16,408,030.46	6,023,678.10	2,452,428.66	1,803,052.62
November	23,303,782.34	746,980.08	22,556,744.26	16,407,354.48	6,149,389.78	1,995,895.38	1,742,462.86
December	23,862,966.20	775,000.00	23,087,966.20	16,496,380.40	6,234,291.37	2,255,252.50	1,696,068.64
1882—January	24,243,382.26	762,111.53	23,481,270.73	17,788,245.97	5,693,024.76	1,984,325.23	1,547,945.23
February	24,704,933.81	765,000.00	23,939,933.81	18,541,340.52	5,831,402.36	2,062,742.98	1,601,191.43
March	25,663,298.81	887,210.88	24,776,087.93	19,039,760.73	5,736,327.20	2,305,538.30	1,453,354.46
April	26,519,252.22	993,150.92	25,526,101.30	19,963,183.00	5,562,918.30	2,145,965.63	1,381,093.10
May	27,518,619.53	1161,789.36	26,356,830.17	20,622,520.38	5,734,309.79	2,339,170.39	1,496,566.23
June	28,311,328.53	1344,852.60	26,966,475.93	21,282,495.62	5,683,980.31	2,419,934.81	1,796,712.55
July	28,955,781.79	1330,493.28	27,625,288.51	22,037,273.31	5,588,015.20	2,599,606.49	1,982,695.57
August	30,198,208.64	1370,660.62	28,827,548.02	22,094,815.90	6,732,732.10	3,176,053.39	1,870,745.07
September	31,068,182.32	1473,646.07	29,594,536.25	23,824,360.13	5,770,176.12	2,569,036.25	1,799,316.21

THE mystery near Nile, N. Y., four miles north of Richburg, is a very light affair as a producer. It was visited on Saturday last by an AGE representative, and found to be dry as far as operations had proceeded.

OIL men in the Cherry Grove district buy the Oil Region daily papers to find out what their new wells are doing. They favor the circulation of the paper that makes the biggest report of the wells' production.

EXPORTS FROM 1864 TO AUGUST 31, 1882, INCLUSIVE.

THE quantity of Petroleum and the quantity and value of Petroleum Products exported from the United States, during each of the fiscal years from 1864 to 1881, inclusive, as reported by the Bureau of Statistics, are as follows:

Year ended June 30.	EXPORTS.											
	Mineral, crude (including all natural oils without regard to gravity.)		Mineral, Refined or Manufactured.						Residuum (tar, pitch, and all other from which the light bodies have been distilled).		Total.	
			Naphtha, benzine, gasoline, etc.		Illuminating.		Lubricating (heavy parafine, etc.).					
	Gallons.	Dollars.	Gallons.	Dollars.	Gallons.	Dollars.	Gallons.	Dollars.	Gallons.*a*	Dols.	Gallons.	Dollars.
1864 . .	9980654	3864187	438197	154191	12791518	6764411	. . .	. . .	. . . .	. . .	23210369	10782689
1865 . .	12293896	6868513	480947	173943	12722005	9520957	. . .	. . .	. . . .	. . .	25496848	16563413
1866 . .	16057943	6015921	673417	188825	34255921	18626141	. . .	. . .	. . . .	. . .	50987341	24830887
1867 . .	7344248	1865001	224576	34175	62686687	22509466	. . .	. . .	. . . .	. . .	70255511	24407642
1868 . .	10029659	1564933	1517268	167873	67909961	19977870	. . .	. . .	. . . .	. . .	79456888	21810676
1869 . .	13425566	2994404	2673094	445770	84403492	27636137	*b*134532	51122	. . . .	. . .	100636684	31127433
1870 . .	10403314	2237292	5422604	564864	97902505	29864193	*b*6871	2611	. . . .	. . .	113735294	32668960
1871 . .	9859038	1971847	7209592	746797	132608955	34138736	*b*59632	22660	155474	14770	149892691	36894810
1872 . .	13599768	2307111	8092635	932160	122539575	30566108	541419	211287	438186	41724	145211583	34058390
1873 . .	18439407	3010050	9743593	1487439	158102414	37195735	748699	277966	781074	79566	187815187	42056756
1874 . .	17776419	2099696	9737457	1038622	217220504	37560995	1244305	404244	1827798	142299	247806483	51254815
1875 . .	14718114	1406018	11758940	1141440	191551933	27030361	1173473	313656	2752848	187103	221955308	30078568
1876 . .	20520397	2220268	14780236	1442811	204814673	28755638	963442	303863	2581404	193206	243660152	32519786
1877 . .	26819202	3756729	15140183	1816682	262441844	55401132	1601065	497540	3196620	317355	309198914	61789438
1878 . .	27936727	2694018	16416621	1411812	289214541	41513676	2304624	639381	3968790	316087	339841303	46574974
1879 . .	25874488	1927207	18411044	1192229	367325823	31783575	5162835	1039124	4967000	276490	421741190	36218625
1880 . .	28297997	2180413	15054361	1258780	331586442	35999862	2487681	655468	3307038	210726	380733519	40305249
1881 . .	44690998	. . . .	20342664	. . . .	487322613	. . . .	. . .	. . .	. . . .	. . .	552356275	34343260
'82 to Aug. 31	26176699	1446425	10538968	789164	305078521	26827245	5466244	1200086	2838318	183936	350098750	30946856
Same time '81	25468836	1933075	12656343	1197169	273159776	26203415	3247243	720176	2547426	136415	317079651	30190325

As a given number of gallons of refined petroleum represents the product of a larger number of gallons of crude petroleum, it is necessary to reduce the exports of petroleum to their equivalent in crude oil, in order to arrive at a knowledge of the percentage of the total product of mineral oil exported. It has been ascertained as a result of a careful computation, that the quantity of petroleum and its distilled products exported during the year ended June 30, 1878, was equivalent to 407,482,175 gallons of crude oil; or, in other words, that the exports of petroleum constituted about 66 per cent. of the production. A larger percentage of the mineral oil product of the country is exported than of any other product except cotton.

a Barrels reduced to gallons at the rate of 42 gallons to the barrel. *b* Estimated.

OIL ON GASPY BAY.

AS oil has taken to itself quite a tumble upwards, it becomes a matter of some interest to the red-hot producer just where he shall proceed to drill the next well, as territory in the old fields is getting mighty scarce. For the benefit of such we herewith give the history of an important (?) development that was made as early in the PETROLEUM AGE as 1866. Gaspy Bay is located about 600 miles northeast of the City of Quebec, Canada, and is one of the pleasant harbors along the Gulf of St. Lawrence. Ever since America was discovered, and men have invested that region, oil has been discovered oozing from the rocks. After the excitement of Pithole a number of Montreal gentlemen who had visited the former place, and thereby became imbued with the spirit of the oil wild-catter, determined upon a search for petroleum on the Gaspy Bay, and to this end large tracts of land were leased, and otherwise secured. A regular oil company was organized, with a gentleman named Chamberlin, of Montreal, as president and a well was sunk. At 90 feet a show of oil was found and a sample of the liquid was forwarded to an assayist of Montreal, who pronounced it a superior quality, though imparting kerosene in smaller percentage than our Pennsylvania production. Several barrels of the liquid were obtained, but drilling was continued to about 900 feet. During the process several sand formations were found in regular order. The well at that depth was tubed and pumped and a small tank was filled with oil. Something went wrong with the pumping apparatus and the financial agent of the company, who had had three weeks' experience in Pithole operations, took charge of the well. It is, perhaps, unnecessary to say more. The well was quickly plugged and the operation was abandoned. Here is an opening for a pure wild-catter. He can do more work between two nights in that region than in any other oil region of record, as the sun rises at 3 o'clock A. M., and does not set till about 9 P. M., and even then goes down with as much obstinacy, apparently, as the oil market.

TABLE SHOWING TOTAL PRODUCTION OF CRUDE PETROLEUM IN PENNSYLVANIA AND NEW-YORK OIL FIELDS, AND CONSUMPTION.

From 1859 to 1881, Inclusive.

Year.	Oil Creek Division. Bbls.	Pithole District Bbls.	Tid'ute and Fagundas District Bbls.	Central All'g'ny Divis'n. Bbls.	Butler, Armstr'g & Lower Allegany Bbls.	Clarion Division Bbls.	Bradford Division Bbls.	Bullion District Bbls.	Warr'n Div. Bbls.	Beaver Div. Bbls.	Alleg. Co., N. Y., Div. Bbls.	Yearly Total. All Districts. Bbls.	Consumption. Bbls.	Yearly Average Price.
1859	2000	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	2000	500	20.00
1860	500000	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	500000	300500	9.60
1861	2113609	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	2113609	1280000	.49
1862	3056690	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	3056690	1472000	1.05
1863	2611309	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	2611309	1992800	3.15
1864	2216109	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	216109	1946620	9.87½
1865	1585200	912500	20500	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	2518200	2238610	6.59
1866	2302700	1095000	490000	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	3887700	2574401	3.74
1867	2393300	814000	839900	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	4047200	2960561	.41
1868	2672617	445500	729000	26000	. . .	. . .	. . .	. . .	. . .	. . .	. . .	3873117	3404645	3.62½
1869	3462500	365000	535000	22500	45000	. . .	. . .	. . .	. . .	. . .	. . .	4430000	3716341	5.63¾
1870	2745528	173585	723838	713150	918644	. . .	. . .	. . .	. . .	. . .	. . .	5274745	4562642	3.89
1871	2040263	182054	697887	1083386	1091458	310293	. . .	. . .	. . .	. . .	. . .	5405341	5178038	4.34
1872	1429685	145065	847199	881140	2658080	829079	. . .	. . .	. . .	. . .	. . .	6790248	5954742	3.64
1873	1094389	119864	895983	851934	4402563	2526231	. . .	. . .	. . .	. . .	. . .	9890964	7847953	1.83
1874	734247	55770	373325	564978	5160265	3921267	. . .	. . .	. . .	. . .	. . .	10809852	7875145	1.17
1875	504639	35130	351407	343905	4712702	2821214	18509	. . .	. . .	. . .	. . .	8787506	9256416	1.35
1876	611884	37450	354284	333640	4755623	2377700	382768	64220	51337	. . .	. . .	8968906	10414877	2.56¼
1877	734858	60380	312700	474262	5431072	3021120	1465451	1306342	151371	62085	. . .	13019641	11977107	2.42
1878	686948	60000	308780	363710	4552815	2276408	6482400	505265	108300	92490	. . .	15437116	13783672	1.19
1879	389400	36500	227900	258652	2876787	1438342	14268945	289591	45550	82100	. . .	19913767	16851222	.85⅞
1880	335342	36500	168542	166143	1737969	868984	22343202	146672	91655	102956	. . .	25997965	18228905	.94½
1881	293504	31938	146474	145374	1394706	844442	22817975	128338	438000	102956	607106	26950813	21263740	.85¾
	34516721	4706236	7022719	6228774	38737684	21235080	67779250	2440428	886213	442587	607106	186502798	155081437	3.92¼

RECAPITULATION.

Production by Fields.—1859 to 1881, Inclusive.

Oil Creek Division, including Shamburg, Pleasantville and Enterprise,	34,516,721	Clarion County,	21,235,080
Pithole Division, including Henderson, Morey and Ball Farms,	4,706,236	Bradford Division, including Elk County,	67,779,250
Central Allegany, including Scrubgrass and West Hickory,	6,228,774	Bullion Field,	2,440,428
Butler and Armstrong Counties, Lower Allegany Division,	38,737,684	Warren, Stoneham and Clarendon,	886,213
Tideoute Division, including Economite, Henderson, Farms, etc.,	7,022,719	Beaver (Smith's Ferry) Division,	442,587
		Allegany Division,	607,106
		Total all Divisions, Production,	186,502,798
		Total Consumption,	155,181,437
		Difference,	31,421,361

This difference includes, of course, all available stocks on hand, all sediment and worthless surplus, and the amount estimated for shrinkage, which would reduce the available stocks to the figure given elsewhere.

This table is made to show the amount of oil saved and used. It differs but little with the first production table published in the AGE, and was compiled by a producer who possesses valuable records.

Area of Developed Territory.

Venango County, Pa	25,600 acres.	Clarion County, Pa.	19,200 acres.
Crawford County, Pa.	6,400 "	Butler County, Pa.	28,000 "
Forest County, Pa.	3,420 "	McKean and Cattaraugus	63,800 "
Warren County, Pa.	11,000 "	Allegany	18,360 "
Armstrong County, Pa.	5,120 "		
Total			180,900 acres.

This covers all territory productive, whether light or small, as yet discovered in the States of Pennsylvania and New-York.

A DRUNKEN driller in the Cherry Grove district, in his ramblings the other night, found his way into a tank house on lot 635, and immediately struck a match for the purpose of searching for crumbs of bread, supposing, it is presumed, that he was in a driller's tent. When asked by the man in charge, who happened to discover him immediately, what he was most in need of, and why he should be fooling around with a light at such an unseasonable hour and dangerous a locality, replied he was after an orthodox (hic) hell. "You are," said the man in charge, extinguishing the light, "and if I hadn't found you as soon as I did you would have been hugging old Dives in less than a minute," and, taking the rambler by the nape of the neck, he led him to an eminence back from the well, and directed him to Farnsworth, as the rendezvous he was in search of.

SHIPMENTS.

Shipment of Crude and Refined, in Barrels of 42 Gallons each, reduced to Crude Equivalent out of the Producing Regions in the years named:

YEAR.	January.	February.	March.	April.	May.	June.	July.	August.	September.	October.	November.	December.	Totals.
1859	. . . . .	. . . . .	. . . . .	. . . . .	. . . . .	. . . . .	. . . . .	. . . . .	. . . . .	. . . . .	500	1,200	1,700
1860	900	1,200	2,500	4,640	11,000	21,000	58,500	64,300	79,000	78,400	63,400	38,400	423,240
1861	54,800	49,620	68,410	95,300	184,000	189,000	200,400	210,000	263,000	184,000	76,321	75,282	1,650,133
1862	98,212	93,101	103,762	201,430	256,320	385,211	375,440	376,311	401,210	406,500	213,611	190,463	3,141,521
1863	171,132	104,928	148,388	288,994	456,211	428,282	213,413	281,400	398,211	264,441	281,340	206,211	3,242,951
1864	148,324	101,431	96,486	132,486	125,218	221,386	110,490	101,218	228,430	220,386	201,441	154,765	1,842,001
1865	121,386	94,803	103,201	122,222	140,301	338,403	184,231	115,821	231,402	228,321	215,262	204,779	2,100,132
1866	132,200	121,320	180,206	260,231	280,320	390,260	200,410	290,210	390,431	318,616	210,016	236,701	3,010,921
1867	123,460	115,321	165,230	250,830	300,210	360,311	210,410	260,310	384,206	300,102	280,013	132,807	2,883,210
1868	150,220	144,201	200,410	280,430	310,408	400,046	390,402	320,210	480,306	260,240	280,260	265,377	3,482,510
1869	200,026	160,320	240,210	260,406	340,318	400,601	310,260	250,214	450,200	480,860	280,210	249,896	3,623,521
1870	360,933	312,910	354,400	390,003	407,908	418,516	410,707	516,679	542,217	557,624	519,780	444,254	5,235,931
1871	437,691	347,718	383,890	389,147	587,375	501,754	541,137	528,134	551,075	505,071	480,977	410,822	5,664,791
1872	476,966	407,606	276,220	428,512	510,417	529,228	591,238	621,954	541,607	607,468	477,940	430,786	5,899,942
1873	573,124	527,440	668,374	708,191	768,176	696,414	814,449	864,768	952,955	1,010,852	959,589	955,443	9,499,775
1874	843,663	501,220	518,246	803,409	899,027	815,413	940,281	793,865	1,014,570	543,341	546,117	602,348	8,821,500
1875	435,095	327,776	693,918	729,581	681,679	745,986	904,537	882,089	1,109,392	871,917	671,066	871,902	8,924,938
1876	677,289	519,193	623,762	603,037	646,150	921,862	1,228,530	1,203,402	1,154,549	524,190	871,496	1,190,983	10,164,443
1877	743,461	484,904	913,919	903,526	1,234,324	1,391,124	1,096,951	1,425,943	1,563,797	1,268,971	1,205,634	600,019	12,832,578
1878	775,791	774,234	741,512	846,636	960,894	1,135,119	1,330,454	1,655,651	1,434,225	1,747,390	1,281,410	992,688	13,476,000
1879	663,998	702,729	973,879	1,136,188	1,331,469	1,369,314	1,625,035	1,808,238	1,627,120	1,662,269	1,453,645	1,542,585	15,896,469
1880	1,650,409	1,395,151	1,613,371	842,268	1,095,259	975,083	1,231,611	1,304,129	1,252,635	1,665,933	1,226,030	1,335,613	15,587,447
1881	1,061,617	915,028	1,276,740	1,348,398	1,563,436	1,729,697	1,925,532	2,214,877	2,031,950	2,080,467	2,069,641	2,014,655	20,232,038
1882	1,817,973	1,829,779	1,729,237	1,751,294	1,843,455	2,261,172	2,239,591	2,078,903	2,003,184	. . . . .	. . . . .	. . . . .	. . . . .
. . . . .	. . . . .	. . . . .	. . . . .	. . . . .	. . . . .	. . . . .	. . . . .	. . . . .	. . . . .	. . . . .	. . . . .	. . . . .	. . . . .

OIL REGION CORPORATIONS.

(From a Regular Contributor.)

TO undertake the task of enumerating Oil Region corporations would be too much for one issue. There are a few, however, that have commanded the attention of the oil trade for a number of years, and deserve occasional mention in the AGE. It is generally understood that the AGE champions nobody's cause in particular; that it is the aim of the publication to give such facts in relation to the oil trade as shall lead to a proper estimate of the importance of the industry, and a correct knowledge of transpiring events everywhere. But abuses by corporations require attention and should be as plainly set forth as their virtues — if they have any. In the Oil Regions they have a faculty of springing up like mushrooms, and no one familiar with the events of the past twelve years could doubt of their damaging effects. Combination of corporations means monopoly, and monopoly means financial death to somebody. When two or more corporations unite it is, as a rule, for the purpose of heading off opposition with a view of controling the avenues of profits arising from any given industry. Such combinations are dangerous, and very damaging to trade and commerce generally. Experience in the oil business has been the teacher of this doctrine, and though the AGE had not come into existence when the most serious consequences were experienced, yet there are those in close connection therewith who have felt the affliction.

But the question of corporate influence at the present time is what we are dealing with. The four principal giants which now have control of the shipping and refining interests are the United Pipe Lines, the Tidewater Pipe Co., the McCalmont Storage Co., and the Standard Oil Co., the

latter being the only buyer of crude outside of the Tidewater Pipe Co., which runs and purchases from five to eight thousand barrels a day, and the McCalmont Storage Co., which buys and ships a thousand or such a matter per day. All of the balance of production goes into the hands of the Standard, except what little outside capital takes and stores away for future use. This certainly gives one corporation an enormous lever, which it can use, if desired, for the purpose of depreciating or enhancing values at any time. It is well known that the Standard Company controls the United Pipe Lines, and that there are numerous ways by which it could lead or mislead the public in regard to the true situation of affairs, not only in the Oil Regions, but throughout the world. Whether or not it is guilty of exercising these powers at the present time is a question very difficult of solution. It is closely watched, and, notwithstanding the fact that everything moves along in the region with characteristic regularity and apparent satisfaction, there are still those who are disposed to believe that the Standard has designs upon the helpless producer. Under the circumstances, it is not difficult to observe how easily this gigantic corporation, with a capital of seventy millions, and owner of two-thirds of the thirty-two million barrels in stock, could place its foot upon any move that should be attempted by any other combination, should that move have a tendency to interference with its plans or wishes. It seems almost a miracle that such has been the case—that a single corporation should acquire control of an industry as important and extensive as that of petroleum. Its strength became so great some time ago that it actually seemed to invite competition for the pleasure it enjoyed in witnessing its enemy's downfall and gazing at its financial corpse. But there is to be seen here and there a small cloud rising which may some day cast a heavy shower. The Tidewater Pipe Co. has withstood all the opposition the Standard could muster, and the McCalmont Oil Co. recently forced the United Lines, by an action at law, to perform its duty in the matter of running oil, which the United refused to do in Allegany County, N. Y., for the reason that the former had dared to construct an opposition pipe line in Warren County. Thus it will be seen that all that is required on the part of Oil Region capitalists is to assert their rights. The giant corporation is a greater power "in the mind" than it is in fact. Its power, after all, in influencing the market for crude could be only temporary in any case. Supply and demand control the Standard as well as the trade generally. There is not a corporation within the limits of the Oil Regions to-day that cannot be forced by the humblest citizen to perform its duty, if the citizen only thinks so. The reason why the great refining combination succeeded to a certain extent was because the people folded their hands and did nothing but shout, "Oh, my!" I believe the Standard, to-day, in all of its branches is as much afraid of outside capital as outside capital is afraid of it. I believe, also, that the United Pipe Lines are more careful to supply the needs of producers than they have ever been, and I am sure the others are as equally willing. Our troubles, therefore, with corporations are not now of a very serious character.

VARIOUS MARKET QUOTATIONS OCTOBER 10.

Empty oil barrels in New-York,	$1.45
110° Fire test refined oil,	8¾c. gal.
120° Fire test water white, 9¾c., standard white,	9c.
130° Fire test water white,	9½c.
150° Fire test water white,	14½c.
Naphtha, crude, in cargo lots, 68° to 73°,	6¾c.
Naphtha, crude, 70°,	7½c.
Gasoline, 86°,	13c.

Cleveland Market, Oct. 14, 1882.

Standard White, 112°,	7¾c.
Prime White, 150°,	8½c.
Water White, 150,	11⅝c.
Headlight, 175,	12½c.
Wisconsin State Test,	8⅜c.
Wisconsin Water White,	11½c.
Ohio State Test,	8½c.
Ohio Water White,	11⅝c.
Indiana State Test,	8½c.
Indiana Water White,	11⅝c.
Michigan State Test,	8⅞c.
Michigan Water White,	13c.
Minnesota State Test,	8½c.
Minnesota Water White,	11⅝c.

THE old Shippen heavy oil well, on Sugar Creek, Franklin County, is a curiosity. It has been in operation for seventeen years. In 1865 the oil from this well was worth $33 a barrel. It now commands a higher price than any other lubricating oil. The well yields only one barrel a day, and in producing that pumps 1,000 barrels of salt water. The oil will not freeze, and is used with equal facility in summer and winter.

A GENTLEMAN named Brown has a mystery on Chappel Fork, a branch of the Kinzua Creek, extending up into the Marshburg Section. Mr. Brown did not wish to relate circumstances, but says he does not propose placing a stop-cock on the advance prices have taken. He is a sensible producer of Foxburg, Clarion County.

CONGLOMERATE.

THE PETROLEUM AGE is one of the successes of Oildom.

IN pipe line runs there has been a falling off since August of about 35,000 barrels a day.

BRADFORD is improving in a business point of view very much under the influence of ninety-five cent. oil.

THE man who always buys oil on the bottom and sells it at the top of the market has turned his toes up.

THE United Pipe Line is erecting a fine pressed brick office on the site of the one destroyed by fire last June.

THE McKean and Cattaraugus field yet contains about 6,000 acres of land that will pay to drill at $2.50 a barrel.

THE Oil Exchange of Oil City has established a clearing house, and the Bradford Exchange is seriously contemplating the same move.

THE Corbett Sand Reel Co., of Bradford, has some of the best patents in the world for the manufacture of rigs and rig appliances for rock drilling.

AT Sarnia, Ontario, " Our Boys' Oil Company " has been organized for the purpose of making further tests in the township of that name. The stockholders think there is yet considerable undeveloped territory there that will pay to drill at present prices.

THE Tidewater Pipe Line, in September, received about 8,300 barrels a day, and during the first seventeen days of October, from the same wells, received only 6,800 barrels, a falling off of 1,500 barrels, with stocks at the wells lower, if anything, than they were on the 1st inst.

THE Cranberry patch, in Venango County, about which so much was reported about a month ago, has " dried up " on big reports. Half a dozen wells were finished there in September, and they are all of moderate dimensions as regards capacity of production. An average of about ten barrels to each well will fill the bill.

THE Bald Ridge pool does not enlarge much. The prolific rock is either very limited as to diameter or length, or else the proper position of the deposit has not yet been determined. It would be a strange circumstance if one or two or three good wells would be the only satisfactory results accruing from the efforts of the drill there. It is hardly probable that such will be the case.

THE undivided half of the Moses tract of land, situate in Limestone Township, N. Y., and close to the Village of Limestone, was sold under mortgage foreclosure on Saturday the 8th inst. The interest named was conveyed in 1877 to Harsh & Schreiber for oil purposes, and it thereafter passed into possession of F. W. Mitchell and others of Oil City. Several wells were sunk on the property, but the low price of oil, together with the light character of the territory, operated as a bar to the success of the purchasers. As a result, the mortgage given to secure balance of payments, amounting to about $50,000, had to be foreclosed. Mr. Moses, at the sale, secured about 7,000 acres of the land, upon which there are some valuable improvements.

AN attempt was made in this city, on the 10th inst., to blow oil out of a well by compressed air, resulting in the blowing up of an old twenty horse-power boiler which was used as the reservoir or receiver. An air compressing engine, having a cylinder 14 inches in diameter, was used to force the air into the boiler, and this was continued until the ridiculous pressure of 250 pounds to the square inch was put upon the old boiler. It, of course, exploded, as any man of common sense might have known, and scattered the fragments all over the ward where it occurred Fortunately nobody was close to it at the time, and none were seriously injured, though Perry Houghton, the engineer, received a few bruises and a hard shaking up.

BRADSTREET'S says:— The lowest grade of kerosene sold in the United States is generally known as 110° fire test. The law of Massachusetts requires that refined kerosene for sale shall be at the lowest test 100° flash. When an oil will test 100° flash, it will likewise test 115° fire. Knowing this, about two years ago one of the Boston refiners changed the brand of his lowest grade of kerosene, then known as 110° fire test, to 115° fire test. Soon after, the same change was made by all refiners and dealers in Boston. As nearly all kerosene made tests 100° flash, and likewise tests 115° fire, it is contended that were the custom of calling the lowest grade of kerosene 115°, instead of 110° fire test generally adopted, the market would be more certain of obtaining a safe burning oil, inasmuch as an oil that tests 115° fire invariably tests 100° flash, and such a test has been proved to indicate a safe burning oil, whereas an oil that tests, or is said to test, 110° fire does not necessarily test 100° flash.

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THE PETROLEUM AGE.

VOL. I. BRADFORD, PA., NOVEMBER, 1882. NO. 12.

PETROLEUM.

CHAPTER XII.

Business of 1871 and 1872.

WE now enter a period — an "epoch" it might be termed — in the history of this business; the most interesting, perhaps, and the most fruitful of important results that the Oil Regions had ever witnessed. The peculiar nature of the commodity, as an article of commerce, together with its very uncertain source of supply, had a tendency to clothe it with a speculative qualification which made it subject to the manipulations of unscrupulous and designing capitalists. The very thing, however, that was most needed in order to make a success of any "corner" that might be attempted, was, perhaps, the real cause of the remarkable fluctuations in the market as being the opposing element in the monopoly contest — the uncertainty of the source. The success of schemes having in view the elevation of prices depended entirely upon the nature of the producing districts. It was an easy matter to inaugurate what was termed a "bull" movement, or to establish a "corner" in the market, if the supply was known to be no greater than the demand, and, unlike any other commodity the country produced, no estimate could be made of the possibilities of future supply. Sometimes it appeared to assume the attitude of complete exhaustion, and any person could judge of results on that score. Again, when a new field sprang into existence, the possibilities, or probabilities, of increase in supply were seldom, if ever, properly calculated. Up to this time, however, there had never been any general move to control any branch of the business by capitalists. Individual enterprise and investment succeeded or failed according to its merit. This, however, cannot be related of the business in the years to follow, as will be seen in future chapters. In the transportation of the product, innumerable "shippers" were supplied with tank-car facilities by the railroads and the three principal tank-car lines. These latter were known as the Empire Line, the Green Line, and the Erie Line. The business of the Erie extended down the creek from Oil City to Rouseville, where cars were furnished to all shippers alike, and its route was over the Oil Creek, A. & G. W., and Erie roads, to New-York. The Empire Line delivered in New-York, Philadelphia, and any other eastern port or point, and its business amounted to more than all the others put together, if we except the private lines running from the Creek to Cleveland, Ohio. The Green Line occupied the "route to the sea," via the Allegheny Valley R. R., and was owned by that corporation. When a shipper desired to transport a quantity of oil, he simply applied to one or the other of these lines for tank-cars, many of which were simply flat cars with wooden tanks erected on them, and his wants were supplied in the quickest possible time. This statement of circumstances is given to show the condition of this particular branch of the industry at the time of which we write. When contrasted with circumstances in later years, it will be observed that a change was wrought of no very limited proportions.

The tide of active operations began to flow early in 1871, to the lower country, or Butler, Armstrong and Clarion Counties. Mention was made last month of the beginning of developments in the vicinity of Parker's Landing, and during all this year the excitement increased from day to day. The town itself was composed of two parts. One was known as Lawrenceburg, situated on the bluff southwest of the Landing, communication between the two being by a highway that was as near impassable as it were possible to make it without blocking it altogether. This road led in a southerly direction along the bluff, which was so high and steep as to cause great difficulty in ascending with conveyances heavily laden. Then, again, in the descent it became a matter of necessity to block or lock the wheels, by which great ruts were dug into the soft argillaceous slate-rock, which caused a passage for floods of water during rain storms, that seemed to carry solid chunks of the mountain with them. Up this unpleasant route pedestrians had to pass through mud, next thing to knee deep, in the wet seasons, or climb a steep bluff by another route equally as well filled with obstructions.

The leading portion of the town up to this time had consisted of three or four dwellings occupied by the ancient residents of the community — principally of the Parker family. The oil

business, as usual, brought new life and activity, and a town of considerable proportions sprang up in a very short time. The flat was quite narrow, admitting of but one street running straight through it north and south, upon both sides of which the buildings were erected. Those along the river bank were establishsd, not upon a sandy foundation exactly, but upon stilts or long scantlings at the rear, the solid earth forming the resting-place for the material at the front side. This gave to passengers by river, or rail, what might be termed an unfavorable view of the place. In fact, the most unbecoming portions of the new city were those first seen. From the landing to the depot on the opposite side a ferry-boat conducted not only all material that was transferred, but also all the people who had traffic with the place. Five cents was the fare charged, and it is said the business proved very remunerative to the charter-owners who gathered of these "shekels" from $40 to $100 per diem. Along the bluff, extending from the depot on the east side to the Clarion River northward, a mile or more, wells were sunk during the year that proved quite profitable. At Foxburg, Fertig & Hammond, of Erie, had already sunk a few wells which had a tendency to cause operations northeastward, and along the course of the Clarion River, which unites with the Allegheny midway between Foxburg and Parker.

Meanwhile, operations on the west side of the river from Foxburg to the Farran Farm which was situated about a mile south of Lawrenceburg. Here S. D. Karns was flourishing as the chief operator, having leased the Farran Farm at an eighth royalty and $2,500 bonus. Prior to this, the same gentleman had sunk four wells on different tracts in the neighborhood, all of which proved fairly productive. The older districts of what was termed the upper country had become tolerably well drilled over, and operators were flocking in great numbers to this new development. Fertig & Hammond and John L. McKinney had already made investment in the vicinity, having secured the Dutchess Farm which formerly constituted a part of the Robinson estate. A well was drilled by these parties, and proved also to be a large producer for those days of small wells. This farm was a mile and a half nearly west of the Landing. All the territory between the river and the Duchess Farm was now open for nomination for the honors of oil, and commanded large prices. Portions of the Robinson Farm, which contained nearly 1,000 acres, were eased to various parties, and a season of much activity was the result. Perhaps no greater excitement had ever been witnessed in any new section, after the decease of Pithole, than followed the successful results on the Robinson and Duchess, Parker and Farran Farms and Tom's Run. The whole area from Foxburg, at the north to Bear Creek at the south, a distance of nearly four miles in length by a mile in width, became the scene of a blazing fire of excitement and activity. Hundreds of operators from the north poured down upon the community ready to "devour" anything in the shape of an oil lease. Of course, when they were disappointed in obtaining what they were after in close proximity to the productive patches they moved outward in all directions and secured what was first offered. Lambing and B. B. Campbell, of Pittsburg, with other parties, ventured to cross the Bear Creek Valley at the south, which for some time was supposed to be the limiting boundary of producing territory in that direction. They, too, were successful in obtaining oil. The first well was located on the Campbell Farm, and produced fifty bbls. a day, Another scope was thereby added to the general area which furnished rich food for the hordes of hungry men from the upper region who ceased not to arrive in squads each day during the whole summer and fall. The "Landing" became notorious throughout the entire realm of oil, and from a mere hamlet it sprang forward acquiring the dignity of a city, which will be shown further on. The government thus far was managed by the Burgess of Lawrenceburg, who had apparently about as much power to check the tide of social evils, which also set in at the earliest opportunity, as a school-boy would have in attempting the *role* of Principal. The place became the rendezvous for the impoverished and forsaken social pirates that afflicted Petroleum Centre, Oil City, Tidioute, and other points of the upper country. We pass it for the present, and will give its history more in detail on a future occasion.

While operations were in progress on the west side of the river, the east side was also receiving attention. The Fox estate, which consisted of upwards of 1,000 acres, was bounded on the west by the Alleghany River, and on the south by the Clarion River. This was being operated by Palmer, of Cleveland, who had procured a leasehold privilege of such a character, that but few aside from him ever acquired that right.

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FOREIGN OIL DEPARTMENT.

MOVE OF RUSSIA'S OIL—RUSSIAN PETROLEUM.

THE New-York *Commercial Bulletin* of recent date contained the following: Touching the subject of a paragraph which appeared in Monday's *Bulletin* on the development of Russia's oil fields, a member of a well-known oil-shipping firm in Beaver Street said yesterday: "I agree in the main with the facts mentioned in the *Bulletin* and the deductions drawn therefrom. I take exception, however, to the statement that the 5,000 barrels of oil which entered London on the 14th of last month were any better than previous smaller consignments from southern Russia. Its quality will, in our judgment, never compare with America's best production, and European markets will still continue to prefer our own petroleum. Though Russia's oil will not prove any great rival to us, I must admit that for lubricating purposes her oil will injure our trade somewhat, as our advices indicate that Russia's production is very good for the purpose named. None of this oil has, however, gone to Trieste, for the cargo which has been mentioned was shipped in a Russian vessel from here. No steamer ever went there. The best oil Russia can produce is far inferior to ours. It is dirty and smoky, and pretty good evidence of this is found in the fact that Russians themselves will not generally use it. The Levant has, we understand, taken none of this oil, domestic only being used. On the question of competition, England, too, comes in the market, for her lubricating oil is far better than Russian, and she may prove a heavy rival in the European markets. The Russian developments will, no doubt, compel us to keep up a good quality of oil at home." To this the *Commercial Bulletin* adds these remarks: "From these and previous remarks, it will be seen that there is some little division of opinion among oil men here, but none of them shut their eyes to the fact that at some time or other the question of Russia's oil territory may have some effect upon the industry here. It was stated on good authority that the 5,000 barrels which had been shipped to London had not yet been sold." And to this *we* might further add, that there is a story afloat among old maids to the effect that one of their number was found one morning weeping bitterly, and when interrogated as to the cause of her grief, replied that she was just contemplating the horrors and terrors she should experience in case she should some day marry and have a dear little baby who should crawl into the oven and become a thoroughly roasted piece of humanity. Of course it would be bad for her and the baby, too; but nothing in comparison to the *Bulletin's* distress in case a cargo of Russian petroleum should some day be sold in English markets in competition with the American product. It is true the *Bulletin* takes plenty of time in which to have this dire calamity occur, "some time or other!" This prating about foreign oil competing with American petroleum is bosh of the simplest kind. It is safe to state that such an event is not within the range of possibilities, so long as American producers are capable of furnishing what the world needs at a price per barrel far above even $1.00. The *Bulletin* should not become paralyzed because of these fearful forebodings. Whatever may be the effect of its harpings upon the trade in New-York, it certainly cannot in the end effect the inevitable law that is just now governing the petroleum trade of America—supply and demand. We have reached a point in the development of our industry, where we know that the world will absorb all we can produce and draw upon the stores that we have been laying up these many years, Russia and Bald Ridge to the contrary notwithstanding. It is more dollars we want for our valuable product and less cold *wind* from the north.

THE CALIFORNIA OIL FIELD.

(Regular Correspondence of THE AGE.)

SAN FRANCISCO, Nov. 1, 1882.

INTEREST in the Los Angelos County oil district is increasing somewhat. A new well was brought in there about ten days ago, by Scoffield & Co., which started at the rate of 75 or 80 barrels a day, and is still doing about 30 barrels. It is located in Pico Cañon, a section that promises to become of some importance as a producing centre. The firm of Scoffield & Teris have in the same vicinity half a dozen other wells under way, but, of course, it is not to be presumed for a moment that all will result as satisfactorily as the one just completed. Holders of oil property here are somewhat jubilant over the enlarged prospects of a speedy decline in the yield of the Pennsylvania region. California is yet securing more than half of its supply from your region, and the demand is increasing quite rapidly. It is a remarkable circumstance that the interior, though receiving from our dealers regular and large consignments, has, at the present time, but just sufficient oil to keep the wheels of

trade moving. There are, also, consignments of some magnitude of late to Oregon, where petroleum is taking the place of fish oils, that have formed the principal source of light as well as the principal unguent of that part of the world. Prices have advanced a shade in sympathy with the feeling in Pennsylvania, and the feeling in the trade is generally more hopeful. The Continental Transportation Company, which transports, or imports, all the oil from the East, have recently been receiving more oil than usual, which is an indication that something is up. Dealers are apparently thoroughly posted in circumstances on all sides, and some of them have been making large investments in Pennsylvania crude. They do this, of course, from reports of declining yield, which reports are received through the press of the Oil Regions, among which the PETROLEUM AGE seems to stand first in influence. Its reports are strictly relied upon, as for nine months they have not been in error.

THE PEOPLE WHO DIDN'T BUY OIL BEFORE THE BOOM.

THE man who loaned a friend $1,000 just before the rise to save him from bankruptcy, it being all the loose money he had about him, and was intended for use as margins to purchase. He's now sorry he saved the man.

The clothier who was shust coing to puy sume but de market got avay so high as neffer vas.

The butcher who felt like cleaving his left ear.

The drayman who had used his earnings at his last bum, and was around looking for a quarter-of-a-dollar job.

The blacksmith who bought "puts" every evening with the expectation that the market would drop the next day about two cents.

The "bear" who sold his oil all out at 96, expecting to buy it in at 93.

The other fellow who argued that the Standard didn't want oil to go to a dollar, and advised all his friends not to touch it at such prices as 98 cents.

The "phellow" who wouldn't believe that the figures given by statisticians, having authority, were correct, and wouldn't have it that production was declining.

The man who had absorbed all his money in drilling wild-cat and other wells for two years past, and was in debt so far that his credit was a damage to him. He couldn't buy a spoonful.

The man who sold calls all the year at $1.00 a barrel, and failed to cover, expecting the market to drop off ten cents after the oil was called. He turned up a financial fizzle.

The man who would bet all the money he could earn in five years that the Standard Oil Co. would dump ten millions of barrels on to the trade when prices struck a dollar, if such a day ever came.

The woman who always lectured her husband (between acts) for staying long in oil.

The woman who would rather spend her (husband's) money for a seal sacque than invest it in oil at 60 cents.

The man who makes a big show in the community with other people's money and struggles to be what the gods oppose.

The man who thought that a rise of 45 cents a barrel was a big thing and producers should be satisfied with it.

The man whose information concerning the actual position of the article was as limited as is a child's regarding the business of the "kingdom come."

WHO DID BUY OIL.

THE man who had sound sense.

The man who exerted himself to obtain bottom facts concerning oil production and consumption.

The man who had a taste of Cherry Grove and had a few dollars left.

The man who could not sleep nights if he was short of oil.

The man who had some knowledge of the sly operations of the Standard Oil Co.

The man who quit drilling before his last penny had been sunk in a useless search for wealth. He purchased just before the rise and is a purchaser still.

The man who owned property in Allegany County, N. Y., and Bald Ridge, Butler County, Pa.

The man who sunk no wells for the past year and having accumulated something above his outlay was prepared to margin more or less of the stuff. He's happy now, and his wife, who did her own washing, is now able to keep two servants and pay them off when they become too corpulent for their positions.

The woman whose peculiar instinct always led her to have a proper conception of circumstances that effected the affairs of men. She believed the market would advance when no man knew it. She always looked out for the thief in the night. She invested her spare change and she now gives largely to the poor.

And, lastly, the man of capital who had faith in the future of the business judged from a careful and intelligent standpoint. All these loaded up with oil before the boom came and did not become frightened at a sudden drop of a few cents a barrel.

THE ALLEGANY FIELD.

TABLE SHOWING THE PROGRESS OF DEVELOPMENTS AND PRODUCTION OF THE ALLEGANY (N. Y.) FIELD.

Month.	No. of wells completed.	Dry.	Production, bbls., of new wells.	Average per well.	Average daily Production of Field, Bbls.	Drilling.	Rigs.	Stocks in wooden tanks, Bbls.	Stocks in Iron tanks, Bbls.
Total, 1880	8	42	76	9½	76	4	6	. . .	. . .
Jan'y, '81,	4	2	18	9	94	4	5	. . .	. . .
February	4	1	24	6	112	4	8	. . .	. . .
March .	5	2	60	12	162	4	7	. . .	. . .
April . .	3	1	20	10	170	5	6	. . .	. . .
May . .	4	1	48	12	212	20	21	. . .	. . .
June . .	14	8	130	9¼	327	24	35	. . .	. . .
July . .	22	5	275	12½	588	47	57	. . .	. . .
August .	53	17	586	11	1080	62	68	. . .	. . .
September	63	11	910	14½	1740	105	118	. . .	. . .
October .	96	5	1432	15	2896	164	198	38000	108891
November	154	10	2732	17½	5180	155	200	84666	142216
December	196	2	5115	26 1/10	8937	187	204	180200	169250
Jan. 31, '82,	162	2	3914	24 1/6	11123	191	209	270860	243147
Feb. 28th	189	4	4154	21.97	13200	212	201	373460	258247
March 31st,	216	2	5580	25.83	16000	215	221	374490	359347
April 30th	257	6	6356	24¾	20760	226	230	400000	417347
May . .	265	7	5992	22⅝	22438	179	191	440000	542347
June . .	163	11	3605	12	22220	94	153	475000	650000
July . . .	81	. .	1488	18⅓	19391	45	123	375000	550000
August .	60	6	1199	20	17650	34	98	295927	550000
September	29	3	435	15	16320	39	58	275610	540000
October .	45	3	660	4⅓	14802	70	51	. . .	. . .

CONSIDERABLE interest was felt in the course operators intended to pursue in this field after the collapse of the Cherry Grove pool. It was thought by the trade generally, that there would be a general rush to drill the remainder of the territory remaining along the edges or outskirts. To some extent, though very limited, this was true, but on the whole the activity was not equal, at the first of the month, to the demands of the parties who desired to procure cheap oil. The field has evidently passed all hope of increasing its yield which has now fallen below 14,500 barrels a day. A few wells have been sunk a few miles north of the field in the vicinity of the Nile venture mentioned in former numbers of the AGE. When the Nile Well was completed, and contained a quantity of black oil, it was thought that an extension of the black oil pool, of which the Boyl Well at Richburg was the leading exponent, was about to occur and several wells were projected. Between the Boyl and Nile, however, there were the Harding and Wilcox Wells, on lots 43 and 44 respectively, both of which were failures of the most pronounced type. The Dow Well, which has been used the second or third time now, to influence prices in the downward course, is situated between the Wilcox failure and the Nile Well, though forming an angle half a mile to the west. It is a fraud of the worst and most infectious form, and was pronounced so more than a month ago by THE AGE. It was introduced on Wednesday, the 9th inst., as promising to make a fair producer, and was reported to have made a flow. The owners were active in offering bets that the well would yield 300 barrels this year, but did not insert in the offer the provision that the 300 barrels would come from some other well. It is quite an easy matter to run oil into a well and pump it out again, especially if other people's money defray the expense. The manner in which the Dow Well has been manipulated is by no means very creditable to the parties having control of it. Every man in Bradford knew to his satisfaction the well was worthless, and yet Bradford men sent out the alarm freely to all the world that it had made a flow. This may be a fair way of dealing in any commodity, but it is certainly a "peculiar" way. The field offers nothing to fear to the trade.

LARGE SPECULATORS.

AMONG those brokers and dealers of the Bradford Exchange, who handle large amounts of oil each day, might be named C. P. Stephenson, Harry Marlin, Hilton & Waugh, E. H. Barnum, E. E. Chambers, P. B. Crosby, A. J. Stevenson, C. W. Pratt, F. A. Daily, J. B. Jayne, Dr. Bolard, John J. Carter, and Dr. Book. The business of Stephenson and Harry Marlin, Hilton & Waugh, Barnum and Chambers, amounts to immense proportions. That of C. P. Stephenson amounts to perhaps 175,000 barrels a day, while Marlin's reaches 150,000. This, of course, only includes purchases, while the sales are of equal proportions, swelling the aggregate to 300,000 barrels a day. It is a circumstance much to the credit of all of these gentlemen, that disputes or mistakes seldom transpire, notwithstanding the fact that transactions of great magnitude are made frequently under a pressure of an enormous excitement. Aside from those named above, there are a host of others whose transactions are large, and all are equally as faithful in the performance of their respective part of a contract, whether in their favor or against them. In Oil City and New-York there are dealers whose business transcends that of either of those mentioned to a large degree; but as we are not so familiar with their operations we refrain from giving them personal notice.

PRODUCTION TABLE.

SHOWING THE TOTAL DAILY NET YIELD OF THE PENNSYLVANIA OIL FIELD FROM SEPTEMBER, 1859, TO OCTOBER 31ST, 1882, IN BARRELS OF 42 GALLONS EACH.

Years.	Jan.	Feb.	Mar.	April.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.	Totals.
1859	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	10	15	18	28	2,173
1860	30	50	89	215	500	1,000	2,000	2,500	3,000	3,500	2,000	3,000	547,439
1861	3,201	4,041	4,800	5,400	6,000	6,100	7,100	8,500	7,000	5,150	5,514	6,716	2,119,045
1862	6,000	5,300	7,400	8,000	9,400	9,000	8,500	11,000	13,000	10,565	8,053	7,238	3,153,183
1863	6,200	6,400	7,000	5,500	6,000	7,603	7,022	8,100	9,200	7,120	9,500	10,260	2,667,543
1864	8,100	6,300	4,500	5,000	7,000	5,100	5,600	5,700	7,180	5,545	10,100	10,320	2,215,150
1865	5,900	5,800	5,000	7,500	8,000	8,000	7,400	6,350	6,400	6,800	7,600	9,350	2,560,200
1866	9,200	9,100	5,000	7,100	8,100	9,500	9,350	9,440	12,000	10,400	11,000	11,165	3,385,105
1867	10,900	8,100	9,000	10,100	10,500	9,000	10,100	10,000	10,100	7,660	9,155	8,313	3,458,113
1868	8,200	9,400	8,100	9,300	11,000	12,400	13,000	11,800	10,250	8,225	7,580	7,150	3,540,670
1869	8,100	8,500	10,000	11,000	13,000	13,000	13,560	13,000	13,500	12,500	11,200	10,625	4,186,475
1870	11,348	11,802	11,509	12,400	15,990	13,400	13,800	15,950	18,203	18,000	17,061	15,990	5,308,046
1871	13,500	13,300	13,082	12,950	13,054	13,882	14,900	15,866	15,555	15,889	15,599	15,841	5,278,072
1872	17,943	17,894	15,680	16,221	17,402	12,140	16,933	17,440	16,598	18,450	25,942	20,630	6,505,774
1873	20,550	21,460	21,830	22,260	24,632	26,361	23,406	30,900	32,500	31,343	33,584	34,680	9,849,508
1874	32,800	30,940	29,760	28,104	29,442	31,222	33,987	32,000	29,461	29,944	29,231	28,101	11,102,114
1875	27,900	26,509	26,012	23,009	23,000	23,805	24,991	23,940	23,800	23,900	23,821	23,594	8,948,749
1876	23,102	25,440	13,560	23,800	24,628	24,400	24,890	25,300	25,900	26,400	26,500	25,900	9,142,940
1877	26,930	27,560	28,860	32,060	36,000	37,440	39,210	42,100	41,321	41,200	39,900	40,120	13,230,330
1878	39,200	39,900	39,200	40,100	41,111	40,820	41,200	42,900	43,999	44,480	45,200	43,900	15,272,491
1879	44,000	43,830	47,960	50,810	52,911	55,600	56,911	59,940	61,498	60,980	58,750	58,231	19,835,903
1880	59,982	63,890	66,215	68,063	72,080	73,104	73,794	74,980	71,941	77,491	76,112	74,080	26,086,692
1881	73,030	69,060	73,900	75,245	79,000	82,460	81,900	79,100	78,231	77,971	77,892	76,642	28,136,353
1882	75,028	74,910	74,751	76,690	78,601	80,469	90,020	98,739	79,685	72,805	. . .	. . .	. . . . .
Total twenty-three years to December 31st, 1881,													186,532,067

WELLS COMPLETED.

TOTAL NUMBER WELLS COMPLETED EACH MONTH IN THE YEARS NAMED.

A. D.	Jan.	Feb.	March.	April.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.	Total.
1870	131	131	114	135	164	182	161	156	135	144	112	79	1,644
1871	98	68	70	81	95	150	139	116	125	186	161	181	1,470
1872	48	118	98	122	130	98	131	117	96	101	41	101	1,201
1873	100	105	105	110	106	180	112	116	116	111	108	95	1,364
1874	108	111	108	110	112	113	124	102	108	117	112	116	1,341
1875	184	186	194	180	169	194	208	206	208	215	213	228	2,385
1876	235	236	248	207	200	258	243	274	223	270	278	271	2,943
1877	275	249	296	264	336	598	314	254	332	460	398	391	4,167
1878	279	238	202	411	468	278	210	180	176	232	241	160	3,075
1879	144	136	221	263	395	336	335	280	269	229	225	268	3,101
1880	311	238	358	494	435	315	339	359	359	360	334	309	4,211
1881	232	218	201	310	412	371	348	335	314	302	347	405	3,795
1882	357	359	389	449	457	328	188	248	169	116	. . .	. . .	. . .

THE TRANSFER OF GOLD COIN IN NEW-YORK.

A NEW-YORK paper states the last annual report of President Wm. Dowd, to the Clearing-House Association, showed that within the twelve months covered by his review, $375,000,000 in gold coin was taken through the streets of the city to meet the requirements of the three-score banks included in the association. This $375,000,000 weighed over 686 tons, coming from the sub-treasury to the clearing-house on balances. Of course, these balances vary from day to day. During the administration of Assistant-Treasurer Acton, the largest debit noted for any one day was on July 3 last, when over $7,000,000 went out. Prior to the appointment of Mr. Acton the balance on one occasion reached over $8,500,000, and to pay it 17 tons of gold had to be taken from the sub-treasury vaults and passed over to the clearing-house authorities for proper distribution among the creditor banks.

Not the least interesting feature of this immense transfer of gold under the direction of the Clearing-House Association is the fact that each and every dollar of the millions is carried through the streets and delivered by one man, or, rather, by one man and his assistants. That man is John C. Barkley, popularly known to every banker, broker, and office boy in the city's financial center as "Honest John Barkley."

Service for the clearing-house by no means limits his work. Every dollar shipped to Europe,

or received from Europe, is conveyed to or from the ship on his trucks, and scores and scores of fashionable families are never content to leave the city for summer homes until Barkley has transmitted their silver to safety vaults.

John C. Barkley does not work for nothing, nor for mere pleasure, nor for glory. He has a truck on which he can carry, in gold, $2,000,000, or 40 shipping kegs. The fee for each keg is $1, or for the trip out of Wall Street to the steamship company's pier, $40. But this is far from excessive when consideration is given to the responsibilities attending the business.

THE REAL ESTATE MARKET.

DURING the latter half of the month of October transactions in oil property were not so numerous as for the first half of the same, nor were they as numerous as for the first 13 days of the present month. The truth is, the country is in a most peculiar situation. It appears to be passing from a lower to a higher grade of values, and just where the scale is to balance is the question that commands attention and consideration. Holders of producing properties are firm in the belief that they are to witness an important advance, not only in the price of oil, but, also, in the price and value of every old well or piece of territory capable of yielding the *stuff*. Purchasers, on the other hand, are like buyers of oil certificates, they fear the ghost of somebody or something that may appear in some of the dense forests wherein roams the inevitable wild-catter, and, as a consequence, tremble on the verge of transferring hard cash for what they term "old junk." Some are a little more sanguine of the future and are seeking investment at the rates asked, and trades are beginning to increase in number. In the Bradford district there have been reported 26 transactions, amounting to $175,000. In Allegany the sales have been fewer and the aggregate was also less, being only $118,000. In Warren and Forest, large transactions have not been of as frequent occurrence as usual owing to the fact that nearly all the territory supposed to be first-class had changed hands previously. During the past 20 days, ending on the 12th, there has been a concerted move on the part of operators who are land owners in the region southwest of the Sheffield pool to capture all that remains of the promising territory. Just how much money has been paid out for this purpose is not apparent, but it is no inconsiderable amount, and swells the aggregate of outlay for the month to something like $100,000. In the Cherry Grove field there have occurred quite a number of well-sales at prices to suit purchasers, as a rule. It is the only point in the entire region that wells of similar age and capacity of production are disposed of at rates that seem below the general 125-cents-a-barrel valuation. This is due, of course, to the application of the expensive methods necessary to keep the wells in producing order. Sucker-rods have been applied where the wells have ceased to flow; but even these, in many cases, have failed to answer the ends desired. As a consequence, producing wells are not sought after there by those who are in search of such property.

But, on the whole, oil property throughout the entire circuit of the producing fields must be considered of increased value over our last report. It is presumed, moreover, that this advance will continue as long as no new or important discovery is made until production brings from $400 to $500 per barrel net, as in the days of high-priced oil. Producers, therefore, have every encouragement to maintain possession of their goods, and they seem to fully realize their position in the financial world.

IRON TANKAGE.

THE following is a list furnished to the *Era* by the United Lines, showing the amount of iron tankage completed during October in different parts of the field:

Location.	*No.*	*Owner.*	*Capacity*
Tiona	10	United	355,000
Olean	11	"	397,600
Wellsville	3	"	105,350
Colegrove	3	"	106,200
Murphy Station	1	"	1,750
Anchor Station	1	"	1,850
Bolivar	2	McCalmont Oil Co.	70,600
Total	31	Total	1,038,350

It might be considered a strange matter that so much new tankage should be constructed in face of the fact that production is declining daily. But it must be remembered that it is but a short time since the country was flooded with over 35,000 barrels a day in excess of consumption or shipments. It required a great many new tanks to provide storage for this surplus. In accordance therewith these tanks were ordered, and will, perhaps, all be filled with the oil that has been backed up at the wells before the daily yield shall have fallen below the daily shipments.

RUSSIANS are improving conveniences for the conduct of their oil business. Russia is progressive, but is not posted in oil matters.

TABLE SHOWING TOTAL PRODUCTION OF CRUDE PETROLEUM IN PENNSYLVANIA AND NEW-YORK OIL FIELDS, AND CONSUMPTION.

From 1859 to 1881, Inclusive.

Year.	Oil Creek Division. Bbls.	Pithole District Bbls.	Tid'ute and Fagundas District Bbls.	Central All'g'ny Divis'n. Bbls.	Butler, Armstr'g & Lower Allegany Bbls.	la rion Division Bbls.	Bradford Division Bbls.	Bullion District Bbls.	Warr'n Div. Bbls.	Beaver Div. Bbls.	Alleg. Co., N. Y., Div. Bbls.	Yearly Total. All Districts. Bbls.	on-sumption. Bbls.	Yearly Average Price.
1859	2000	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	2000	500	20.00
1860	500000	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	500000	300500	9.60
1861	2113609	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	2113609	1280000	.49
1862	3056690	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	3056690	1472000	1.05
1863	2611309	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	2611309	1992800	3.15
1864	2216109	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	216109	1946620	9.87½
1865	1585200	912500	20500	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	2518200	2238610	6.59
1866	2302700	1095000	490000	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	3887700	2574401	3.74
1867	2393300	814000	839900	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	4047200	2960561	.41
1868	2672617	445500	729000	26000	. . .	. . .	. . .	. . .	. . .	. . .	. . .	3873117	3404645	3.62½
1869	3462500	365000	535000	22500	45000	. . .	. . .	. . .	. . .	. . .	. . .	4430000	3716341	5.63¾
1870	2745528	173585	723838	713150	918644	. . .	. . .	. . .	. . .	. . .	. . .	5274745	4562642	3.89
1871	2040263	182054	697887	1083386	1091458	310293	. . .	. . .	. . .	. . .	. . .	5405341	5178038	4.34
1872	1429685	145065	847199	881140	2658080	829079	. . .	. . .	. . .	. . .	. . .	6790248	5954742	3.64
1873	1094389	119864	895983	851934	4402563	2526231	. . .	. . .	. . .	. . .	. . .	9890964	7847953	1.83
1874	734247	55770	373325	564978	5160265	3921267	. . .	. . .	. . .	. . .	. . .	10809852	7875145	1.17
1875	504639	35130	351407	343905	4712702	2821214	18509	. . .	. . .	. . .	. . .	8787506	9256416	1.35
1876	611884	37450	354284	333640	4755623	2377700	382768	64220	51337	. . .	. . .	8968906	10414877	2.56¼
1877	734858	60380	312700	474262	5431072	3021120	1465451	1306342	151371	62085	. . .	13019641	11977107	2.42
1878	686948	60000	308780	363710	4552815	2276408	6482400	505265	108300	92490	. . .	15437116	13783672	1.19
1879	389400	36500	227900	258652	2876787	1438342	14268945	289591	45550	82100	. . .	19913767	16851222	.85⅞
1880	335342	36500	168542	166143	1737969	868984	22343202	146672	91655	102956	. . .	25997965	18228905	.94½
1881	293504	31938	146474	145374	1394706	844442	22817975	128338	438000	102956	607106	26950813	21263740	.85¾
	34516721	4706236	7022719	6228774	38737684	21235080	67779250	2440428	886213	442587	607106	186502798	155081437	3.92¼

RECAPITULATION.

Production by Fields.—1859 to 1881, Inclusive.

Oil Creek Division, including Shamburg, Pleasantville and Enterprise,	34,516,721	Clarion County,	21,235,080
Pithole Division, including Henderson, Morey and Ball Farms,	4,706,236	Bradford Division, including Elk County,	67,779,250
Central Allegany, including Scrubgrass and West Hickory,	6,228,774	Bullion Field,	2,440,428
Butler and Armstrong Counties, Lower Allegany Division,	38,737,684	Warren, Stoneham and Clarendon,	886,213
Tideoute Division, including Economite, Henderson, Farms, etc.,	7,022,719	Beaver (Smith's Ferry) Division,	442,587
		Allegany Division,	607,106
		Total all Divisions, Production,	186,502,798
		Total Consumption,	155,181,437
		Difference,	31,421,361

This difference includes, of course, all available stocks on hand, all sediment and worthless surplus, and the amount estimated for shrinkage, which would reduce the available stocks to the figure given elsewhere.

This table is made to show the amount of oil saved and used. It differs but little with the first production table published in the AGE, and was compiled by a producer who possesses valuable records.

Area of Developed Territory.

Venango County, Pa	25,600 acres.	Clarion County, Pa.	19,200 acres.
Crawford County, Pa.	6,400 "	Butler County, Pa.	28,000 "
Forest County, Pa.	4,420 "	McKean and Cattaraugus	63,800 "
Warren County, Pa.	11,000 "	Allegany	18,360 "
Armstrong County, Pa.	5,120 "		
Total			190,900 acres.

This covers all territory productive, whether light or small, as yet discovered in the States of Pennsylvania and New-York.

LARGE PROFITS.

THE outstanding certificates of the United Pipe Lines amount to about 23,825,000 barrels, and of the Tidewater 6. Now, on every thousand barrels that go to make up this enormous quantity there is a storage charge per month of $12.50, except in the case of certificates held by those who are possessed of the storage facilities themselves. In that case the charges are about $1.50 per thousand barrels per month. Nearly all the private storage capacity of the country is leased by the pipe lines, and the latter charge is made against oil in the owner's own tanks, in order that any losses that the pipe line holding the leases might sustain by shrinkage, leakage, etc., should be made good. Of leased storage there is perhaps 5,000,000 barrels. Then if we deduct

this from the 29,825,000 we have a total of 24,825,000 barrels, upon which $12.50 per thousand barrels is paid monthly. This would give us 24,825 certificates of 1,000 barrels each at $12.50 per month—$310,312, or $3,723,744 per annum. To this add the charges on the private storage—5,000 certificates at $1.50 each, $7,500, and we have the total of $3,731,244, which is annually paid by holders of oil to the storage or pipe line companies. There is also another charge made that increases this amount. It is called "freshening." Certificate oil that changes hands on 'change is renewed or "freshened" from day to day by the payment to the pipe line of fifty cents per diem. This gives the purchaser a certificate with a storage-paid slip attached, by which he knows that there are no storage charges against the oil represented by that certificate. By this process it will be seen that the line obtains fifteen dollars a month on all the oil that passes through the hands of brokers and dealers daily, instead of the $12.50 above stated. As this item does not run up into the millions, we drop it as unworthy of note in so great a calculation.

Then, moreover, when the pipage charges which are made by the pipe lines for running oil from the wells to the shipping racks are calculated, it will be seen that there is some money being made by somebody out of somebody, and of whom or by whom it is difficult to relate. The pipe lines have run an average this year of 80,000 barrels per day, for which they collect twenty cents a barrel, making a total of $16,000 a day, or $5,840,000 a year. Between storage and piping, therefore, the sum of $9,571,244 is paid yearly to the pipe lines, and the United takes nine-tenths of the whole sum.

CHERRY GROVE.

(Regular Correspondence of the AGE.)

GARFIELD, Nov. 10, 1882.—The month past has witnessed some changes of importance in the Cherry Grove field. The wells are gradually going down, and some are being abandoned altogether. The operators who have stuck to their wells and put them in working order, are feeling fully as blue over the situation as those who have let them stand entirely idle. Thus far, only a few have been abandoned altogether, but a large number are producing nothing and cannot be made to pay with oil at a figure less than $2.50 a barrel. The average well does not yield to exceed 15 barrels a day, and the total production of the field may be put at about 3,900 barrels per diem. The field is completely circumscribed, as the last venture at the southwest is a failure of the most satisfactory type. This is located on lot 722, and owned by Galey and others. As for future operations here it is unnecessary to speak, for the drilling business is winding itself up in the finest shape. All that can be said for this entire district is that, unless Balltown and Sheffield come up with an increase, there will be a great struggle to keep the yield up to anything like its present standard. Balltown and Sheffield have some territory but during the Winter season approaching it will not be drilled to any great extent. Wild-cats have not proven valuable property for some time, and when these are shut out of the market there would seem small hope for the bear element of the trade.

The stocks at the wells have been reduced to a considerable extent during the month, and the pipe lines are now running on a little over half time. The great pump station of the United Line at Vandergrift City will be removed to the next nearest and largest field that may be opened in this county or Forest, providing promise is given of an increase of business. It has capacity for over 30,000 barrels a day, and the idea of being forced to play three or four thousand seems rather tough, indeed, on the company. The McCalmont Line, is taking care of the oil of its tract, and ships by rail pretty much all that it receives.

THE POSITION OF PETROLEUM.

WHILE the price of crude petroleum has receded a little during the past week from the extreme point which it had previously touched, the decline has not carried it within twelve cents of the dollar mark, and the immediate recovery which has followed shows the elasticity of the market. The position of the commodity continues to be most favorable. Advices from the regions show more activity with the drill, but results are only such as are to be expected from the old fields, and afford very slow additions to the yield. For the first time in the history of the business the progressive "wild-catter" hath not where to place his drill. So well defined has the entire region become, that no pool, no belt, now lies before him inviting the investigating bore. The most promising field, which lies in Forest and Warren Counties, and includes the Sheffield District, has its limits clearly defined, and is controlled by a few strong producers who are said to have formed a syndicate for the purpose of controlling production in

the territory. Whether they restrict production, as it is announced they propose doing, until oil has reached the higher mark at which it now seems to aim, or not, it is safe to assume that they will not push the drill as recklessly as it has been pushed in Cherry Grove, Bradford, or any of the older fields. The possibilities of the field are limited, and they will be retained for the profits which higher prices will afford. There is a strong sentiment now that oil will touch $2.00 before spring, and that sentiment is not unreasonable in view of the present situation. Still it must be borne in mind that even at the small average yield which the increased activity in the older fields can affect, there will be, in the aggregate, an addition to present supplies stimulated by high prices, which may temporarily change the present relations of supply and demand. The more remote future must, however, depend upon rich new territory for its supplies, for the existing fields promise no such increased productions as will be demanded by the steadily growing consumption, nor do they show signs of sufficient vitality for the current requirements of the trade. The American production of petroleum is not restricted to the Pennsylvania regions, but no other field is likely to afford so cheap or so bountiful a supply, and with the decline of the Pennsylvania territory the era of very cheap oil seems to us likely to draw to its close.—*Drug Reporter.*

THE BAKU DISTRICT.

WITHIN the period of 59 years' monopoly—from 1813 to 1872—the maximum yearly production of crude petroleum never exceeded 212,000 barrels: in the first year of free competition it at once more than doubled, and the average production annually for 1879, 1880, and 1881, amounted to from 3,000,000 to 4,000,000 barrels, and besides this, immense quantities of crude petroleum are wasted at the place of production for want of adequate means of tankage and transportation. The extraction of petroleum for domestic use has been carried on by the natives from time immemorial. It became a resource of commerce about 1813, and formed a monopoly till 1872, when the system was finally done away with, an excise duty being imposed on refined petroleum, which, in its turn, was abolished in 1877; and it is since that period that the petroleum industry, being virtually thrown open to free competition, commenced to attract enterprise and capital on a scale unexampled in Russia.

Petroleum refineries have lately sprung up in great numbers, and there are, at the present time, 193 refineries, with 487 stills, of a daily working capacity of 300,000 gallons of refined petroleum. The price of kerosene at Baku, during the period from 1870 to 1879, has fluctuated between 1s. 8d. and 3d. per gallon. The different products derived from petroleum in their respective application for illuminating, heating, and lubricating purposes, have proved of immense importance as substitutes for other less abundant natural riches. In 1881, the petroleum products exported from Baku by sea, amounted to 2,946,000 barrels, and these included 1,450,000 barrels, or 58,000,000 gallons of kerosene, the rest consisting of crude petroleum refuse and lubricating oil. Some works have lately been completed to facilitate the manipulation and marketing of the produce; a railway line, ten miles long, with tank cars, connects Balakhane, the principal group of wells, with Baku; the wells, refineries, and piers are also connected by several pipe lines, their total length being about sixty miles. A large number of tank steamers, and several hundred sailing vessels, have also been built specially to carry the petroleum without casks. The Baku harbor has 25 piers, and some of them are furnished with pipes and pumps, so that tank vessels may be loaded at the rate of 100 tons per hour.

OCTOBER SALES AND RUNS.

FOLLOWING is a summary of the sales of oil at the Bradford, Oil City, Pittsburgh and New-York Oil Exchanges during the month of October. Nothing less than 1,000 barrel certificate ever sold; each barrel represents forty-two gallons:

	BRADFORD.	PITTSBURGH.	OIL CITY.	NEW-YORK.
January,	23,885,000	11,441,000	27,163,000	
February,	19,412,000	9,153,000	22,207,000	
March,	27,467,000	13,208,000	29,448,000	
April,	22,245,000	8,325,000	19,171,000	15,000,000
May,	39,777,000	21,814,000	38,402,000	35,000,000
June,	29,969,000	20,417,000	38,127,000	21,000,000
July,	48,736,000	22,040,000	31,536,000	22,400,000
August,	34,494,000	16,140,000	50,000,000	20,000,000
September,	113,402,000	67,220,000	156,450,000	48,500,000
October,	59,797,000	36,586,000	69,737,000	30,200,000

Average runs and shipments each month of year to October 31st:

	Total Daily Runs.	Bradford Daily Runs.	Total Daily Shipm'ts.	Bradford Shipm'ts.	Charters.
January,	70,401	62,229	55,798	40,864	33,877
February,	81,853	72,825	63,062	47,183	43,075
March,	81,186	65,758	53,489	38,963	41,080
April,	80,158	67,392	54,413	35,662	35,453
May,	83,397	75,472	56,478	43,329	47,220
June,	89,103	78,701	65,266	47,980	54,829
July,	87,948	65,445	61,779	41,013	34,213
August,	111,243	70,646	66,046	42,500	. . .
September,	96,079	64,608	66,220	42,000	40,000
October,	85,227	. . .	67,132	41,000	. . .

STATEMENT made by the United Pipe Lines July 10th, 1880, and enlarged to October 31st, 1882. It gives gross stocks, sediment and surplus, net stocks, outstanding balances, receipts (or runs) from all sources, and total deliveries, or shipments:

	Gross Stocks.	Sediment and Surplus.	Net Stocks.	Outstanding Acceptances.	Credit Balances.	Receipts from all Sources.	Total Deliveries.
1877—April	1,895,153.71	77,386.70	1,817,767.01	449,640.14	1,368,126.87	200,570.81	125,797.90
May	1,762,602.64	75,363 87	1,687,237.77	663,663.71	1,003,574.06	493,200.58	619,612.26
June	1,596,367.68	81,255.42	1,488,112.26	661,786.57	826,325.69	538,906.95	737,609.77
July	1,482,433.51	81,741.50	1,400,692.01	667,166.36	733,625.65	615,145.46	699,476.18
August	1,489,052.53	81,144.63	1,407,907.90	643,281.46	764,626.44	673,403.04	666,144.28
September	1,339,032.27	67,163.68	1,271,868.59	552,676.26	719,192.33	625,225.37	769,745.57
October	1,434,728.78	46,771.99	1,387,956.79	673,850.05	714,106.74	687,094.59	570,092.71
November	1,691,399.52	39,418.00	1,651,981.52	657,591.36	994,390.16	913,644.19	649,242.70
December	2,830,413.36	68,729.63	2,761,685.73	754,338.25	2,007,347.48	1,656,150.37	506,332.99
1878—January	3,124,641.15	72,453.43	3,052,187.72	864,711.41	2,187,476.31	872,681.18	715,149.78
February	3,439,526 98	82,452.66	3,357,074.32	1,404,292.13	1,952,782.19	1,030,688.44	720,478.14
March	3,940,000.65	92,963.06	3,847,037.59	1,487,430.50	2,359,598.09	1,196,251.26	701,681.27
April	4,335,274.84	133,935.76	4,201,340.08	1,615,791.19	2,585,548.89	1,137,359.40	778,050.53
May	4,609,681.45	150,117.76	4,459,563.69	2,065,333.31	2,394,230.38	1,104,352.40	843,081.33
June	4,719,699.25	181,800.03	4,537,899.22	1,950,420.81	2,587,478.41	1,092,604.02	1,004,474.55
July	4,885,851.72	229,080.78	4,656,770.94	2,078,466.56	2,578,301.38	1,258,648.45	1,108,074.33
August	4,571,658.59	217,085.19	4,354,573.40	2,064,590.75	2,289,982.64	1,195,268.67	1,496,009.04
September	4,410,061.84	225,088.86	4,184,972.88	2,705,853.95	2,479,119.03	1,182,118.57	1,318,265.33
October	4,072,267.43	234,050.89	3,838,576.54	1,517,484.27	2,321,092 27	1,271,174.73	1,564,984.43
November	4,083,972.42	216,655.30	3,867,317.12	1,784,443.35	2,082,873.77	1,159,623.71	1,129,047.42
December	4,098,200.92	201,470.30	3,896,730.62	1,741,311.07	2,155,419.55	972,338.83	924,035.93
1879—January	4,759,031.41	182,707.80	4,576,323.61	2,153,763.83	2,422,559.78	1,234,237.19	546,271.74
February	5,157,646.15	171,689.80	4,985,956.35	2,346,238.22	2,639,718.13	1,055,377.95	643,828.71
March	5,503,768.71	190,797.91	5,312,970.80	2,484,861.83	2,828,088.87	1,363,512.17	1,029,029.70
April	5,885,675.24	211,957.06	5,673,718.18	2,644,301.36	3,029,416.82	1,379,349.76	1,015,482.04
May	6,180,843.53	315,992.98	5,864,850.55	2,522,846.36	3,342,364.19	1,488,514.31	2,228,043.27
June	6,426,802 45	334,457.29	6,992,345.16	2,959,921.12	3,132,424.04	1,437,250.90	1,204,557.54
July	6,419,699.08	323,295.32	6,096,403.76	2,323,575.29	2,772,828.47	1,472,651.01	1,465,518.05
August	6,380,606.63	300,345.15	6,078,261.48	3,581,224.03	2,497,037.45	1,714.620.11	1,728,940.81
September	6,589,859.83	325,363.85	6,264,995.98	3,783,480.38	2,481,015.60	1,691,863.41	1,455,811.45
October	6,701,209.87	299,393.67	6,401,816.20	3,788,155.65	2,613,660.55	1,646,725.06	1,502,991.20
November	6,951,133.67	303,641.17	6,647,492.50	3,927,300.18	2,675,192.32	1,600,961.29	1,328,621.19
December	7,362,409.76	294,571.37	7,067,838.39	4,235 459.40	2,832,378.99	1,771,781.24	1,331,822.12
1880—January	7,735,257.38	295,517.60	7,439,739.78	4,436,788.55	3,002,951.25	1,832,963.04	1,145,194.98
February	8,187,012.49	322,568.93	7,864,443.56	4,602,286.49	3,262,157.07	1,607,663.89	1,178,111.92
March	8,621,097.49	351,130.35	8,969,967.14	4,811,894.33	3,458,072.81	1,815,133.31	1,396,037.88
April	9,662,354.59	388,558.16	9,273,766.43	5,846,536.60	3,427.259.83	1,739,297.37	723,794.73
May	10,306,078.79	454,193.73	9,851,885.06	6,361,320.05	3,490,565.01	1,552,240.91	975,061.26
June	11,266,771.77	477,431.60	10,789,340.08	7,397,131.89	3,392,208.19	1,781,937.29	848,339.08
July	12,039,010.00	475,446.56	11,563,563.44	8,125,241 25	3,438,332.19	1,890,161.44	1,095,528.25
August	12,749,623.28	462,987.28	12,286,636.00	8,635,394.80	4,651,241.20	1,904,452.70	1,177,448.42
September	13,618,276.03	382,398.71	13,236,327.32	9,287,193.94	3,949,133.38	2,075,105.26	1,115,184.71
October	14,020,877.32	391,331.55	13,629,545.84	9,448,615.77	4,180,930.07	1,999,487.98	1,598,285.06
November	14.656,891.55	341,262.67	14,315,628.88	10,038,824.08	4,231,804.80	1,859,991.50	1,064,146.39
December	15,369,758.67	361,184.83	15,008,573.48	10,913,283 49	4,095,290.35	1,987,283.54	1,207,928.35
1881—January	16,291,307.87	360,688.98	15,930,618.89	11,672,583.61	4,258,035.28	1,876,526.50	931,818.71
February	17,355,485.31	391,616.47	16,936,868.84	12,029,594.35	4,934,274.49	1,823,713.46	781,745.93
March	18,488,476.94	432,304.19	18,056,172.75	13,099,262.44	4,956,910.31	2,222,812.39	1,116,695.11
April	19,560,752.23	517,422.38	19,043,329.85	13,846,285.20	5,197,044.65	2,182,636.96	1,183,779.02
May	20,591,177.33	640,662.03	19,950,455.30	14,608,124.70	5,342,330.60	2,278,582.78	1,356,688.23
June	21,397,698.53	756,412.85	20,641,285.68	14,738,828.77	5,902,456.91	2,318,445.18	1,545,448.13
July	21,982,161.42	774,402.94	21,207,758.48	15,150,267.23	6,057,131.25	2,396,472.50	1,756,044.15
August	22,474,105.51	800,343.43	21,673,762.18	15,240,553.15	6,433,209.03	2,527,888.69	2,013,844.67
September	22,727,740.61	820,434.43	21,907,306.18	15,626,283.11	6,281,023.07	2,233,085.37	1,900,251.83
October	23,212,951.99	801,243.43	22,431,708.56	16,408,030.46	6,023,678.10	2,452,428.66	1,803,052.62
November	23,303,782.34	746,980.08	22,556,744.26	16,407,354.48	6,149,389.78	1,995,895.38	1,742,462.86
December	23,862,966.20	775,000.00	23,087,966.20	16.496,380.40	6,234,291.37	2,255,252.50	1,696,068.64
1882—January	24,243,382.26	762,111.53	23,481,270.73	17,788,245.97	5,693,024.76	1,984,325.23	1,547,945.23
February	24,704,933.81	765,000.00	23,939,933.81	18,541,340.52	5,831,402.36	2,062,742.98	1,601,191.43
March	25,663,298.81	887,210.88	24,776,087.93	19,039,760.73	5,736,327.20	2,305,538.30	1,453,354.46
April	26,519,252.22	993,150.92	25,526,101.30	19,963,183.00	5,562,918.30	2,145,965.63	1,381,093.10
May	27,518,619.53	1161,789.36	26,356,830.17	20,622,520.38	5,734,309.79	2,339,170.39	1,496,566.23
June	28,311,328.53	1344,852.60	26,966,475.93	21,282,495.62	5,683,980.31	2,419,934 81	1,796,712.55
July	28,955,781.79	1330,493.28	27,625,288.51	22,037,273.31	5,588,015.20	2,599,606.49	1,982,695.57
August	30,198,208.64	1370,660.62	28,827,548.02	22,094,815.90	6,732,732.10	3,176,053.39	1,870,745.07
September	31,068,182.32	1473,646.07	29,594,536.25	23,824,360.13	5,770,176.12	2,569,036.25	1,799,316.21
October	31,390,694.71	981,249.05	30,409,445.66	24,031,440.00	5,647,240.00	2,369,517.35	1,834,217.13

THE census bulletin No. 299, which is devoted to statistics of the manufacture of petroleum, states that in May, 1880, there were eighty-six refineries in the United States. Since that time a few have been added. The capital represented by these was $27,395,746.00. During the census year 731,533,127 gallons of crude oil were manufactured, using 504,667 tons of bituminous coal,

THE SITUATION.

SOME remarkable changes have occurred, during the month past, in the position of crude petroleum. Prices have wandered upward, even beyond the limit suggested by the AGE as among the possibilities of the near future. Prices were ranging in the nineties, and was apparently so firmly fixed, that ninety-eight cents seemed to be a hitching-post to which every seller became firmly tied. The hour came, however, when the hitching-straps had to break and away went prices as if winged for a two-dollar flight, fetching up at the $1.35 snag, from which they receded to $1.25 as rapidly as they had gone the other way. After a few jumps up and down, and an occasional fright from some wild-cat venture, they again tumbled, touching bottom at $1.13. From this point another stride was made, one fine afternoon, to the same halting place, $1.35. Another set-back followed, and between $1.25 and $1.30 the market see-sawed for several days, ending on Friday, the 17th inst., in a grand break of ten cents a barrel, closing at Bradford at $1.15¾. This, in substance, gives the movements of prices for the month, and a few thoughts as to causes, like a motion to adjourn, cannot be out of order.

It has been repeatedly stated in these columns that the producing fields were assuming an attitude quite promising of largely increased values. The sudden decline of Cherry Grove was an omen that no candid person could fail to view in the light of an advance in values. Cherry Grove is gone, but another field has appeared on the horizon that seems to possess sufficient capacity to exert an unfavorable influence on prices. This is Forest County, and has been outlined on former occasions, and, so far as the present is concerned, should have no greater effect than any spot of territory in the midst of the little wells of the McKean district. Every time a well touches the sand in that (Forest) locality it seems to command special attention at the hand of the Shorts. When prices were a little too stubburn last week at $1.28, a gusher was reported on the Brigham estate in old territory. Dispatches inquiring as to the importance of such strike were received in large numbers at Bradford. The condition of the person's mind who would be led to make such inquiry, at the expense of a message by wire, is hard to understand. The report, however, did not have the desired effect. But the same cannot be said regarding a Forest County strike. On Friday, the 17th instant, the market was forced from $1.25½ at the opening, to $1.14 during the day, as a result of reports from the Anchor Oil Co.'s well located on the centre of the Cooper tract, Warrant 2991. The well was so centrally located, as will be seen by AGE maps, that it could not possibly miss fire. As good a producer as the Shannon venture, at the southwest corner of the tract, was assured from the day the stake was set for the establishment of the necessary drilling fixtures. They could make no mistake. The "longs" and the "shorts" were agreed upon this point, and yet on completion of the well, which occurred on the 16th, the whole trade became panic-stricken, because this well should yield a hundred barrels the first day in excess of the quantity allotted the Shannon's initial 24 hours' output. It is said that there is nothing more timid at the hour of trial than capital. It is liable to become frightened when, in fact, danger is not within reach. It was so in this case. Had the venture been so situated that it could be termed a wild-cat, opening large areas of good territory, the result would not have been a matter of surprise.

But, when all phases of the business are considered and properly viewed, there can be discovered some causes for results such as those above described. We have arrived at a season when fluctuations must necessarily be great. The trade is floating on an ocean that becomes very rough and stormy by the least excitement of the elements. Every person knows that there is but one way for prices to go, providing no new field of importance is opened, and that is, upward some considerable distance. And on the other hand, while looking forward in hope of such a consummation, the interested stand trembling upon the bank of the narrow stream that divides the distressing past from the more promising future. They are not assured beyond the shadow of doubt that some new addition will not be made to the area of productive territory, and are, therefore, undecided as to the outcome in the near future. Everybody knows that the addition of a rich field at this juncture would prove disastrous to capital invested at present prices. And on the other hand everybody knows that, deprived of such an augmentation, a very large advance must speedily transpire. So it is the *unknown* that rules in the oil market, and the unknowable that speculators take chances against. Thus far, however, there have occurred no important changes in the condition of either of the great producing centres since our last report, except that a large decline has taken place in the production of the old wells, bringing the aggregate for October down to nearly 72,000 barrels per diem. This is certainly a most interesting condition of affairs

for holders and purchasers of oil. At the rate at which this decline has progressed for the past sixty days, the statement for November will show not only a decline in production, but also a depreciation of stocks. On the 18th inst., a report was published in the *Bradford Era*, purporting to give the exact production of 1,335 wells of the Allegany field. This was put at 11,758.14 barrels, or an average per well of 8,807 barrels. The report coming, as it did, on the heels of the big decline of the day previous was looked upon by the trade as a put-up job by some leading capitalists to force prices downward, by alarming the smaller holders, whom they expected would rush into the market to sell their goods at the best offer made. It is, perhaps, needless to state that the report was discredited, and, instead of selling largely, many of the "small fry" turned in and went to purchasing. As a consequence, an advance of about five cents per barrel occurred during the day.

There must have been a mistake in the computation, for on November 1st the AGE was furnished a gauge of nearly 600 wells, all located in the better portions of that district, which showed a condition of things quite in contrast with the above. They compare as follows:

	[*Era*, Nov. 15th.]			[AGE, Nov. 1st.]		
	Wells.	*Production.*	*Average.*	*Wells.*	*Production.*	*Average.*
	1,335	11,758.14	8.807	593	4,348.69	7.33
Total,	1,925	16,953.47		1,925	14,110.25	

The 593 wells are as good producers as any similar number the field affords, and the cause of the remarkable discrepancy in the two tables is not plain. But whatever the cause may be, it is quite evident the daily yield does not increase. One hundred wells a month would be required to sustain it at its present rate, and it is doubtful that during the winter season this number will be completed monthly. Besides, the completion of 500 more wells in the field would about exhaust all the drillable territory it affords. The idea, therefore, of holding this district up as a dangerous factor in future calculations of production is preposterous. Another well has been drilled in Potter County, seven miles south of the Bolivar Wells, which has resulted as a salt-water producer, and serves no purpose but that of furnishing an outlet for a few thousand to its owners.

In the McKean and Cattaraugus district there is no particular change in the aspect. The yield diminishes, and the volume of new operations remains at a very low tide.

In Forest and Warren Counties there is room for a large number of wells on territory well defined, and to this particular section must the anxious operator of the future look for drilling privileges. Allegany and other portions of the Northern Field, which are considered at all valuable, are occupied principally by the heavy men and the large corporations, and will be drilled only as occasion demands. To some extent the same is true of the former districts; but there are innumerable small lots in possession of the more reserved and single-handed men, who have secured, what they term, a nest-egg for future hatching. As the territory, however, from Clarendon to Balltown is of the spotted character, it by no means promises extraordinary yield at any period of the world's history. The production can be, and will be, increased to some extent, but this was agreed upon in all calculations formerly made. We say it will be increased, but it must be remembered that we have ignored Cherry Grove altogether. The increase of the other portions of Warren and Forest for the next four months will hardly make good the decline of Cherry Grove.

A belt extending from the McGee and Horton section, Sheffield, to the Shannon Well and some distance beyond in a southwesterly direction, a total distance of about four miles, exists beyond doubt. It has been known to exist for the past three months, and the fact of a good well being obtained on the line should not cause any person, even though it should start at 400 bbls. a day after receiving a forty-quart shot of glycerine, to become alarmed. It must be remembered that the belt is extremely narrow, as indicated by the result attending the completion of the McKinney Well, on the Williamson lands, only a step southward from the general line or belt. The Clark & Foster strike, near the northeast corner of the Cooper tract, also confirms this theory, as it is a small affair. But the starting point of a new well, and the point at which it rests as a firm producer, in the Forest Field, are widely separated. The Shannon Well commenced at a 300-barrel rate, and within a month passed below forty barrels. The late Anchor strike, which caused a fourteen-cent drop in prices, yielded a little more the first day, but will probably not exceed the Shannon on the thirtieth day. No spot or belt throughout the whole range of country, developed or undeveloped, can, or should be, estimated above from ten to fifteen barrels to each well—that is, of those which may be put down as producers at all. Even Cherry Grove, with all of its two and three thousand barrels per day producers, will not equal in general productive-

ness many portions of the smallest territory of the Northern Field, or Allegany, N. Y. A sufficient amount of drilling, however, on the territory already defined in the Middle Field, should cause a healthy increase in production there, though it would, with great difficulty, be made to supply the natural decline of all the other districts. For a few months to come it is not likely that operations will increase to a remarkable extent, but when spring opens, and facilities for cheaper transportation are furnished, it is natural to suppose that there will be witnessed considerable activity.

Meanwhile, we watch with great interest the important revolutions that are to transpire in the speculative portion of the trade, and in the position that each of the old fields is to occupy in sustaining the daily yield. Deprived of further additions, it is yet but just to maintain that upon the petroleum dial of the future can be read the cheering declaration, "Advanced prices." Of course, it must be admitted that the trade is at the mercy of the army of explorers who are out in search of new deposits. Some should be found, but to determine just where and when is the problem that is to be solved in the future, and upon the solution depends the success or failure of the upward movement.

The fields, as we find them on the 15th of November, were producing 68,041, distributed as follows:

DISTRICT.	BARRELS.
Bradford,	38,941
Allegany,	14,100
Cherry Grove,	5,000
Outside,	10,000
Total,	68,041

The consumption, at the present time, cannot be placed less than 70,000 barrels, though the average for the year may possibly fall a trifle below. At all events, it is safe to state that Cæsar has again crossed the Rubicon — we are producing less oil than the world requires, and when or where are we to make a halt? Surely, a 50-barrel strike, in a Forest County 8×10 pool, will not suffice, though it lends a charm to the music of those who view the situation in an entirely different light — or at least profess to. Bridges and streams should not be crossed till they have been reached; but, at the same time, it is well for all interested to keep their eyes open for any that might appear. If they are not soon encountered by oil producers, in the near future, in the form of some big development, remote from all former districts, then they shall have just such sailing as shall give the best of satisfaction.

OIL ON WAVES.

(From Oil and Colorman's Journal.)

THE oil experiments at the entrance of Aberdeen Harbor were resumed on October 10, under the superintendence of the harbor officials and commissioners. The oil was pumped into the water from three valves, 38 ft. apart, extending across the Channel at a point about 800 yards inside the breakwaters. Seventy gallons of oil were thus expended, and the effects at times were very marked. A stiff southeasterly gale was blowing, the sea being very boisterous, with heaving, broken waves running almost into the harbor. Wherever the belts of oil appeared the form of the waves almost wholly subsided, the surface of the water losing its chopping motion in modified undulations. A quantity of oil was also thrown from buckets, but with little or no visible result. No vessels passed the Channel during the experiments.

Further particulars respecting the escape of the crew and passengers on board the steamer *Balgairn* have been published. They have been the means of making known a fact strikingly illustrative of the value of oil in calming a rough sea—a subject to which we have several times called attention. This vessel ran upon the outlying reef of a small island on which there was no human habitation. Throughout the night on which the mishap took place the most painful suspense was felt by everyone in the ship lest she should slip back into deep water and founder in a few seconds. In the morning the breakers, it would appear, prevented the landing of those on board; but one of the engineers, who seemed to have had some experience of the effects of oil on a broken sea, poured out a large quantity of the lubricating fluid used for the machinery of the steamer, and with the happiest results, for the sea, we are assured, "at once" became smooth, and a ladder was run out from the ship to the island. What quantity of oil was expended on this occasion is uncertain; but it is not improbable that a good deal more was used than was really necessary.

The Shetland men have long been conscious of the beneficial effects that may be produced by the means in question. They frequently have to take their boats forty or fifty miles away in order to reach the prey they seek, and on their return, often heavily-laden with fish, they sometimes encounter a most tempestuous sea as they near their homes. The "furious tideways," to quote the words of a writer on this subject, make the task of reaching the shore in such frail craft a most difficult and perilous one for the fisherman

in bad weather. These hardy mariners in their extremity sacrifice part of their hard-won treasures in order to save themselves. They cut open several of the cod and ling that have been caught, and taking out the livers crush them in order to make the oil exude, and then throw them overboard. The effect, we are assured, is almost miraculous, for, though the undulating movement of the sea continues, not a wave breaks within the spell-bound area suffused by the oil.

A FOREIGN IDEA OF OUR OIL PRODUCING TERRITORY.

IN Europe they look upon the action of producers of oil in America, in their efforts to increase production, as bordering upon lunacy. They obtain the idea that the whole area of producing territory overflows with the liquid, and that it can be barreled simply by dipping it from the streams and ravines. They wonder why it is that they are compelled to pay 25 cts. a gallon for a good quality of the refined article when the crude can be obtained so cheaply. How easy it is, therefore, for the "dear people" to be mistaken. They are very much mistaken in the regard alluded to. A Scottish oil merchant, a short time since, feeling a keen sense of philanthropy, wrote a letter to the *New-York Herald* on the subject of waste oil in America, and advised the appointment of a commission by the State, with full power to act in the premises. This merchant, it is presumed, considered the *New-York Herald* the only medium in America through which the ear of the Keystone State could be reached. He should subscribe for the PETROLEUM AGE.

But, after all, the amount of oil that has gone to waste since the sudden increase that occurred at Coleville, and on the Bingham Estate, McKean County, has been very limited. It is true, Cherry Grove overflowed a little, but the character of the wells was such, that it becomes a matter of wonder that more oil was not lost. When wells gushed out 3,000 barrels a day, it should not surprise even an European if a few barrels of it should gain the nearest rivulet. But through the extraordinary efforts put forth by the pipe lines this was prevented. Europe will find, one of these days, that America has been carefully storing her oil for use in the markets of the world at a largely enhanced value. We have about thirty-two million barrels in store, which ought to be sufficient for all our needs for a year or two. So we say to our friends across the water take it coolly; you can have all you want of us, but, remember, we do not agree upon terms for future delivery.

RUNS, DELIVERIES, STOCKS.

TABLE showing the September and October Pipe Line Runs and shipments, with stocks, on October 31st, 1882—official. Each barrel 42 gallons:

DISTRICT.	RECEIPTS, Pipe.	BARRELS, Sept.	BARRELS, October.
Bradford	United		
Tidioute & Titus'e,	"		
Lower Country	"		
Monongahela	"		
Total	"	2,569,036.20	2,369,517.35
Bradford	Tidewater	244,695.68	233,525.28
Warren	McCalm't St. Co.	55,450.09	25,560.96
Titusville	Octave Oil Co.	4,057.90	4,250.00
Oil City	Charley Run	508.32	510.00
Shaffer	Shaffer Run	697.00	685.41
Franklin	Franklin Pipe	7,945.24	8,050.50
Total all Lines		2,882,390.43	2,642,099.30
Average per day, October			85,227.24
Average per day, September			96,079.68
Average per day, August			111,243.38
Average per day, July			95,192.11
Average per day, June			95,522.95
Average per day, May			85,563.70
Average per day, April			80,093.98
Average per day, March			83,724.96
Average per day, February			83,547.40
Average per day, January			71,855.43

Deliveries.

DISTRICT.	PIPE.	BARRELS.	BARRELS.
All Points	United	1,799,316.21	1,834,217.13
Warren	McCalm't St. Co.	10,083.52	16,575.95
Titusville	Octave Pet. Co.	3,417.95	*3,510.00
Franklin	Franklin Pipe	7,318.06	*7,320.00
Shaffer	Shaffer Run	241.04	*250.50
Oil City	Charley Run	569.72	*540.00
Bradford	Tidewater	171,230.31	218,681.24
Total deliveries		1,992,176.81	2,081,094.82
Am't of Runs in excess of Shipm'ts, October			560,994.48

DISTRICT.	PIPE.	*Net Stocks Sept. 30.* BARRELS.	*Net Stocks October 31.* BARRELS.
Oil City	Charley Run	3,684.95	3,710.50
Bradford	Tidewater	2,432,106.52	2,445,491.01
All Districts	United	29,594,536.25	30,409,445.66
Shaffer	Shaffer Run	27,048.16	*27,450.25
Warren	McCalm't St. Co.	121,246.88	130,614.33
Titusville	Octave Oil Co	8,794.29	*8,801.00
Franklin	Franklin Pipe	23,116.71	*23,216.70
Total October			33,048,729.45
Total September		32,210,533.76	
Total August		31,253,047.61	
Total July		30,157,021.20	
Total June		29,540,517.47	
Total May		28,833,715.51	
Total April		27,969,884.48	
Total March		27,252,806.93	
Total February		26,414,274.36	
Total January		25,788,071.79	
Increase October			838,195.69
Increase September		957,485.53	
Increase August		1,096,026.41	
Increase July		616,503.73	
Increase June		706,801.96	
Increase May		863,631.03	
Increase April		717,077.55	
Increase March		838,532.57	
Average increase per day, October			27,038.57
Average increase per day, September		27,874.64	
Average increase per day, August		35,355.69	
Average increase per day, July		19,887.21	
Average increase per day, June		23,560.15	
Average increase per day, May		27,859.06	
Average increase per day, April		23,902.58	
Average increase per day, March		27,049.44	
Average increase per day, February		22,364.00	
Average increase per day, January		12,174.73	

* Estimated.

THE PETROLEUM AGE.

DEVOTED TO THE

INTERESTS OF THE PETROLEUM TRADE.

PUBLISHED MONTHLY AT

BRADFORD, PA.,

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Sent, post-paid, to any part of the world.

W. J. McCULLAGH,
Editor.

ELECTION day comes and goes, but oil goes on upwards for ever.

THE hardest problem to solve in connection with the oil trade is just how the market will go during the first ten minutes after the opening of business.

ANOTHER rise of 50 cents a barrel and yet it is the opinion of many that crude is as cheap as it was at 50 cents. Peculiar reasoning, but it's true, nevertheless.

STALWARTISM in politics has expired. Stalwartism in the manipulations of the oil market will expire some day also. There is a day for everybody and every party, even for Ben. Butler.

THE AGE greets higher prices with great pleasure. Though it was not loaded with oil at the opening of the last big run-upwards, it feels better, nevertheless, because events transpire as requested by it a few months in advance.

OUR Garfield correspondent is becoming despondent over circumstances in that region. He is not alone in his misery; we have a slight recollection of seeing some others there who feel like wailing, whether they gnash their teeth or not.

OUR San Francisco correspondent relates some interesting facts regarding the traffic in oil on the Pacific Coast. Oil is being transported in favorable quantity to Oregon, and it is presumed even our most northern annex—Alaska—will shortly make a demand for cheap light.

NO member of the Bradford Oil Exchange was found unable to meet his demands during the big rise of the 6th, though the market at times jumped nearly five cents at a leap. They have a faculty of keeping out of the way no matter what transpires, or what damages are encountered.

THE refined trade of Europe is rapidly passing into the hands of a few capitalists and it is reported that the Standard Oil Company of America has a controlling interest in the scheme. Refined is as likely to double in price in foreign ports within the next six months as it is to do anything else.

A COMPACT has been agreed upon, it is said, in New-York, with a few prominent Oil-Region capitalists thrown in, who are determined to force oil to where it will count values by dollars; that it will ascend to the three or four dollar scale. Such a scheme in the absence of a new oil field would be just as easy as sliding down hill.

THE table showing the average production for all past time is an interesting study. August, 1882, gave us nearly one hundred thousand barrels a day, while October renders only a little over seventy thousand, a decline of nearly thirty thousand barrels per diem. Is it any wonder outsiders are willing to invest in oil at any price?

THE total production of the country is now placed at 69,000 barrels a day, 1,000 barrels less than the demand. What a transformation in the space of three months. Then we had 40,000 barrels a day more than we wanted; now we are on our way to a time when we shall probably be in need of nearly that amount more than the country can produce, and what must be the result upon prices?

THE Bradford Exchange established a clearing-house on Monday the 13th instant and by it business was very much simplified. The wonder now is that it was not done before. Bradford's Exchange business has increased remarkably during the past six months and membership stock has been sold as high as $750. Two weeks ago the same could be purchased at $400. This shows what speculation can do in any community.

"HIGH carrying rates have caused the decline," wired a New-York dealer a few days ago. Money seems to tighten in the oil trade more frequently than in any other business. And perhaps in no other commodity do speculators take such remarkable dips as in oil. When operators bite off more than they can chew, the market is generally likely to drop a little. Large quids in mouths of moderate dimensions are liable to cause the chewers some trouble.

THE Democrats have a big opening for a successful drive of the Government mule, for a few years at least. There are a few important measures that have been introduced and "committeed" to death in Congress by Republican bosses, who will now step back a little and let other folks have something to say. Among these is one that the people of the Oil Regions have been interested in for two years past, viz.: The Reagan Inter-State Commerce Bill. This bill provided for the equalization of freight tariffs among all people, but the railroad influence, headed by the — now politically — dead Don Cameron, kept this bill from appearing.

OVER in the Allegany field, the other day, an operator declared his intention of forever quitting the oil business. He said twenty wells had cost him $75,000, and though he was one of the first in the field he had yet to receive about $25,000 to be even, to say nothing of his own expense and time. This is not a big showing, though for the remaining $25,000, he has twenty wells with a production of something over five barrels each. There was after all but little money made by the operators in Allegany County, and what little some of them had they squandered in the exciting contest to obtain a prize in the shape of a 1,000-barrel well in Cherry Grove. Thus it is as it has always been; a few come out ahead in every new field—the "mob" generally gets left.

JUST before the last rise began those who made comparisons between the condition of affairs in 1876 and 1882 concluded that there was no similarity whatever; that, as stocks were low at that time, the power to check an advance was not so great, as at present. But when prices ran up to $1.34, a jump of 36 cents a barrel, it somehow became suddenly apparent to these same parties that they must have been mistaken; that the chances for $4.00 oil were just as favorable for 1882 as on any former occasion. Figures, it is said, will not lie, but men have a peculiar faculty for distorting them so as to make them suit any and every form of faith and desire. A 25-cent rise in the market will make an oilman change his views concerning the situation more quickly than all the forces of facts, figures and persuasive eloquence of the whole trade.

THE press of the country is undoubtedly responsible for the wonderful revolution that has recently taken place in the political situation—that is, the independent press. It is a most promising sign of the times and portends a grand future to this great republic. The voice of the people is always right, and always has been, but the reason why it was not heard, in the ages past, was because it was muzzled by the "men in authority." The voice of one man in a multitude may cause a riot there if permitted to be heard by those in sympathy with it. The voice of a newspaper is heard at greater distances than that of any single person, and strikes the ear of the listener just at the proper time to perform the greatest amount of good for the cause it represents; it is generally heard when the hearer is in his calmest and most peaceful mood—after a hearty meal. The logic of the newspaper which enters a family is the logic defended by that family, as a rule. The arguments of the newspaper are uncontradictory, for everything is made plain and palpable, and to complete the verdict there is no opposing evidence heard in the case. The avenues through which the influences of the press extend are so extensive, so varied, and so numerous, that the gods alone have any conception of them. The voice of the press causes the overturning of governments and revolutionizes all manner of systems in the conduct of the affairs of men in every branch that shoots from the vine of national commerce. It would seem, therefore, to be a matter devoutly to be desired that all who occupy a position to speak in this manner should be possessed of those principles which serve to honesty and truth. A lie spoken through the press is the most damaging of lies, and should be avoided as any other of the great evils of the age.

THE PETROLEUM AGE.

THE AGE with this number is just one year old. The first volume is complete: it is a healthy yearling. A year's work of the producers of Petroleum is portrayed in detail. The AGE has spared no effort within its power to place all the facts attainable, in relation to the oil trade, before its readers in a form easily understood. The reliability of its statements has never been questioned, which is the most encouraging feature of the publication. Mistakes of a trivial character have frequently occurred, it is true, but these have been overlooked by a generous public, in view of the great worth of the magazine as an official exponent of the position occupied from month to month of the great staple which it properly represents. The AGE has passed its first year — the hardest and most trying in the history of all such publications — and proceeds out into the future with good promise of greater success and of an

unlimited duration. It has always been firm in the faith that its value would be appreciated by the intelligent masses connected with the petroleum trade, and in this it has not been disappointed. The circulation increases from day to day and is now of sufficient importance and magnitude to command a large advertising patronage. To those of this class who have been its faithful friends and supporters it owes many thanks, and to the press, which has spoken so many words in its favor, it also justly feels indebted. The mission of the AGE is a most worthy one, and, though it has not fully arisen to the exalted altitude contemplated, it expects to fulfill all obligations in the future and even go far beyond the limits of public expectation. It is nothing if not correct in all of its utterances—in all of its calculations. The trade may therefore rest assured that, so far as the actual condition of the producing fields is concerned, it will always be thoroughly correct. There are also other avenues or branches of the industry that in future will constitute subjects for discussion and proper presentation. This is alluded to at this time simply to give assurance of what may be expected in the volume that will begin next month. There would seem no reason why a journal devoted to an industry of such great magnitude as this should not succeed and flourish. The oil business of this country has not reached its zenith yet, though for the time being producing fields seem to be on the verge of a fair degree of exhaustion. When these older centres of production shall have passed to an uninteresting and unprofitable condition there will be others developed to take their places. There will always be some business to do for the producer of petroleum, though such intervals as we now witness are liable to occur through all time. As to the duration of these intervals it is impossible to form any idea that would even approximate correctness; but they seem to become a necessity, occasionally. They elevate the spirit of speculation and spread enthusiasm over the whole population interested. The AGE feels this, and looks out upon the future with great hope of a season or two of universal success to the oil trade, and, consequently, also to itself.

IMPORTANT ANNOUNCEMENT.

THE publishers of the PETROLEUM AGE, having decided to reduce the subscription price of the magazine, will deliver Vol. II., commencing next month, at the moderate rate of $4.00 per year. It will be sold on trains and at news stands for 35 cents a copy. The AGE will contain the usual amount of interesting matter, consisting of reports of petroleum operations throughout all parts of the world. Special attention will be given the department of tables of production and consumption, and monthly, and semi-monthly, statements of oil operations, etc., etc., etc. It will be an invaluable companion of all people interested in oil or oil matters. Subscribe at once. $4.00 per annum, payable quarterly or yearly as suits the subscriber.

HOVEY STRIKES THE KEYNOTE.

THE Pittsburgh *Journal of Progress* continues to put forth strong words for a commercial and trade journals' association, and suggests Pittsburgh as a proper place for a gathering of the newspaper clans. Local pride would prompt us to advocate the claims of Boston, but we are willing to meet our contemporary half-way and attend the first convention in New-York City. On the whole, New-York seems to be the most available point, containing as it does such a large proportion of the business papers of the country, and being so easily reached from all quarters. A triumvirate, consisting of the Pittsburgh *Journal of Progress*, the New-York *Produce Exchange Bulletin* and the *Manufacturers' Gazette*, began the agitation of this matter, but we think we can safely say that there is not one of the three that desires any special prominence in the movement, and that does not wish the number of enthusiastic advocates was larger. Why should we not have our little convention, as well as the "hickory-handle manufacturers of the northwest?" If it does nothing more, it will promote friendly relations and bring men face to face who have learned to know each other through the columns of their respective journals.—*Manufacturers' Gazette.*

The PETROLEUM AGE, is in favor of such a gathering, but is inclined to think that New-York or Pittsburgh would be rather out-of-the-way villages in which to hold it. Bradford, McKean County, Pa., is the proper place. It is a city of two mammoth petroleum exchanges. We will make it very comfortable for all who attend, and they can see something besides.

THE petroleum discoveries at Wiese, on Lake Tegern, in Bavaria, begins to attract some attention. For 500 years past the monks of St. Quirinus have been using the oil as a remedy, to which great virtues were attributed.

REPORT
OF
OIL OPERATIONS FOR OCTOBER.

WELLS COMPLETED.

Bradford Field.

EAST AND WEST BRANCHES.

Lot.	*Operator.*	*Production.*
Morris, Emery Oil Co., No. 42		8
" " " 43		10
" " " 44		10
Tibbitts, " " 9		8
Jewett, Quintuple Oil Co., No. 15		10
Dent, Whitney & Wheeler, " 16		25
" " " " 17		25
" " " " 18		25
Minard Run Tract (owners), " 60		25
Lot 188, Bingham, John McKeown, No. 8		20

QUINTUPLE.

Lot 163, Chemung Oil Co., No. 3	12

KENDALL CREEK.

Kilbury, Kilbury & Williams	10
Richardson, Hyde	6

FOSTER BROOK.

Willets, I. Willets	15
E. T. Co., F. W. Mitchell	10

COLE CREEK.

Bordell, Forest Oil Co., No. 9	20
Lot 439, J. L. McKinney & Co., No. 25	32
537, Geo. V. Forman	25
Production	85

MISCELLANEOUS.

Elk County, Halleck & Johnson	dry.
Potter County, Lewisville Oil Co	dry.
Wells	20
Dry	294

THE ALLEGANY FIELD.

ALMA.

Lot 18, Mrs. O. P. Taylor, No. 2	15
143, I. W. Shirley	6
143, G. H. Bush & Co	dry.
Wells	3
Production	21
Dry	1

BOLIVAR.

Lot 6, S. & C. S. Baldwin	12
6, McCoy, Wheeler & Co	20
32, Sawyer & Hoagland, No. 8	15
37, Oil Well Supply Co., No. 4	15
37, Frank Springman	5
37, Duke & Barnsdall	6
38, Curtiss & Williams, No. 3	10
38, Bartlett & Foote	20
39, Hugh F. O'Neill & Co	20
39, Smith & Wellman	20
45, Solliday & Sample	10
45, Franchot Bros. & Co., No. 3	10
45, " " " " 4	30
45, Chas. Gillespie	7
46, Chauncey Oil Co., No. 6	17
46, Clark & Davis, No. 8	15
46, Wiser Bros., No. 3	45
46, " " 6	30
46, " " 7	25
63, H. F. Northrup & Co., No. 2	20
63, Kirwin & Reed	18
Wells	21
Production	370

GENESEE.

Lot 7, McCalmont Oil Co	7
7, Weiser Bros	10
8, I. Willets, No. 27	10
16, D. W. Canfield	10
16, Lancy Bros	10
21, Willets & Cranston	dry.
23, Coss Bros. & Mandeville	10
24, Book & Gartland, No. 4	25
23, Davis & Haldemand, No. 5	15
24, " " " 6	20
24, Daggett Oil Co., No. 22	25
24, W. Cranston	10
24, W. P. McCleary, No. 1	20
Wells	14
Production	194
Dry	1

WIRT.

Lot 41, Rice Oil Co	6
49, Lupher Bros., No. 10	20
49, " " 11	20
Wells	3
Production	46

CLARKSVILLE

Lot 17, Ceres Oil Co., No. 2	8
17, Ev. Crandall	6
17, B. F. Bunnell	15
17, Olean, Bascom & Co	dry.
Wells	4
Production	29
Dry	1

WARREN FIELD.

CHERRY GROVE.

Lot.	*Operator.*	*Production.*
610, Broder Oil Co. No. 2		20
610, Minard Run Oil Co. est.		10
612, Wilcox Oil Co		5
618, C. K. Book & Co. No. 4		30
618, Union Oil Co.		5
636, Wingor Bros., div. 23, est.		10
646, Union Oil Co., No. 13		60
646, Kennedy Oil Co. No. 6		10
647, Anchor Oil Co., No. 9		20
647, " " 19		stopped
647, " " 23		5
657, McKenney & Co., div. 14.		5
658, Jennings & Co., div. 5		stopped
658, Anderson & Greenlee.		stopped
671, R. E. Green, No. 4		20
672, Glass Bros. & Co.		stopped
672, Duke & Harris, div. 14		stopped
672, Christie & Stafford, div. 17		10
672, Taylor & White, div. 19, est.		15
672, J. E. Butler		stopped
672, Stafford & Co.		20
672, L. C. Stanford		20
672, E. Mullin		stopped
680, John McKeown, No. 2		10
680, Thompson & Potter, No. 1		20
680, " " 1		40
680, " " 3		25
680, Christie & Stafford		20
680, Logan & Co.		25
680, Deadwood Oil Co.		10
681, M. Murphy, 3 wells		40
682, Mead & Green, est		10
681, Greenlee & Anderson		stopped
681, N. F. Clark & Co., No. 2		10
681, " " 3		stopped
681, Wetmore & Co		stopped
Wells		39
Production		475
Dry and stopped		11

WARREN AND FOREST.

Lot 162, C. Verbeck	5
213, Truby & Allen	dry
Henry's Mills, H. B. Porter	dry
Tract 2,735, Clark & Foster est	40
Cooper Tract, Anchor Oil Co. est	40
Wells	5
Production	85
Dry	2

LOWER FIELD.

CRANBERRY.

Rumbard, Dale & Smullin est	20
" Hulings & Co.	dry
" Hale & Mathers	5
Hughes, Lee & Co	100
Ray, Hughes & Co	40

BUTLER AND CLARION.

B. B. I. Co., Hunter and Cummings	dry
Miller, Adams & Story	dry
Wells	7
Production	135
Dry	2

DRILLING WELLS.

BRADFORD FIELD.

EAST BRANCH.

Lot.	*Operator.*	*Depth.*
Scott, Abbott & McGinnis.		rig
Clapp, Jno. Clapp		drilling
Morris, Emery Oil Co., No. 45		1000
" " " 46		600
" " " 47		100
Dent, P. C. L. & P. Co.		rig
" Whitney & Wheeler, No. 19, fishing		800
" " " " 20,		rig
Cary, Kolosky		rig
Smith, P. T. Kennedy		drilling
Foster, Sterns & Co.		200
Taylor, Humphrey & Barnsdall, No. 2		rig
" " " " 3		200
Minard Run tract, owners No. 61		1600
Sullivan, Mills & Mullin		rig
Bingham, John McEown.		drilling

QUINTUPLE.

Lot 19, E. K. West	rig
25, J. S. Wilson	rig
44, J. W. Humphrey,	rig bldg
69, "	100
50, B. F. Brinton, fishing	1200
163, Chemung Oil Co., No. 4	600
175, D. Atwater & Co.	rig
176, H. A. Booth	rig
202, Butler & Martin	rig
203, "	rig
260, E. T. Howes	rig
Rigs	14
Drilling	12
Total	2

KENDALL CREEK.

Dodge, Dodge & Clark	200
Ledom, Robert Gregg	100

FOSTER BROOK.

Willets, I. Willets.	rig
" Young & Willets	rig
Cronan, J. McMurray & Co.	1000
Childs, O. A. Childs & Co.	rig
Rigs	3
Drilling	1
Total	6

COLE CREEK.

Lot 399, Forest Oil Co., No. 24	rig
399, " " 28	rig
409, " " 10	rig
Bordell, " " 29	600
Lot 394, P. T. & W. C. Kennedy, No. 8	rig
394, " " 9	rig
416, Lee & Apple, No. 4	rig
416, " " 8	rig
416, " " 9	rig
424, Forman & Union Oil Co., No. 20	rig
492, Johnson & Union Oil Co., No. 39b	rig
492, " " " 46b	sand
439, J. L. McKinney & Co. No. 26	rig
439, " 27	1500
556, Geo. V. Forman	sand
Rigs	11
Drilling	4
Total	15

OIL VALLEY.

Fullerton, Angell Oil Co.	4 rigs
Knapps, "	4 rigs
Reid pur, Reid & Brown	1200
Keating, Forest Oil Co,, No. 25	600
Rigs	8
Drilling	2
Total	10

INDIAN CREEK.

M. Loup, Hart & Hicks, No. 22	drlliing
Barse, J. D. Downing	rig
L. Loup, Follett Bros., No. 16	900
" "	2 rigs
Keyes, Indian Creek Oil Co.	rig
Dodge, Frank Hardwick	rig
Loup, Keystone Gas Co.	rig
Rigs	6
Drilling	2
Total	8

FOUR MILE.

Van Campen, Geo. Van Campen, Sr.	rig
Shattuck, Waco Oil Co	4 rigs
Butcher, Brown Bros.	1100
Rigs	5
Drilling	1
Total	6

KINZUA.

Bingham, Union Oil Co., No. 35	10
Chapel Forks, Chapel Forks	shut down
Hukill, R. J. Straight	100
Warrant 2,258, G. H. Van Vleck	drilling
Drilling	4

ALLEGANY FIELD.

ALMA.

Lot 1, A. Jackson	rig
1, N. A. N. Phillips	350
2, Morse & Hardison	rig
2, Anderson & Co	300
18, W. T. Lewis	250
18, "	rig
18, G. M. Barney	350
18, Mrs. O. P. Taylor, No. 3	rig
23, Duke & Norton, No. 23	350

Lot 23, Anderson, Rauber & Co. 600
23, " " " . . . . rig bldg
38, Snow & Co . . . . . 2 rigs
52, Durkee, Young & Co. 700
55, Torry & Davis 700

Rigs 8
Drilling 8

Total 15

BOLIVAR.

Lot 6, Love & Penzer . . . . . rig
6, McCoy, Wheeter & Co . . . . . rig
14, Carroll Bros. 350
32, Hoagland, Sawyer & Co. . . . . rig
32, C. H. Coffin & Co. 900
32, Hazelwood Oil Co., No. 11 800
32, " " " 12 . . . drilling
37, Moran, Klinger & Co 350
37, " " . . . . . rig bldg
36, Mourhess Oil Co 300
37, " " 400
37, Nutting & Dow 500
37, Mutual Oil Co 250
37, " " . . . . . rig
37, Duke & Barnsdall, No 3 250
37, H. J. Hickok 300
38, Bartlett & Foote, No. 2 . . . . . drilling
38, Williams & Curtiss . . . . . rig
38, Fisher Oil Co 650
38, " " . . . . . rig
39, W. S. Stevens . . . . . rig
39, Smith & Wellman . . . . . rig
45, Nutting & Springer 600
45, " " . . . . . rig
45, Franchot Bros. & Co., No. 6 1000
45, " " " 7 700
45, " " " 4 . . . . rig
45, " " " 8 . . . rig bldg
45, Chas. Gillespie, No. 2. 250
45, Solliday & Sample, No. 3 800
45, " " . . . . . rig
46, Palmer & Thyng . . . . . rig bldg
46, T. Kervin . . . . . sand
55, Columbia Oil Co. . . . . 3 rigs
63, Thompson & Hoover No. 2 500
63, Columbia Oil Co. 300
63, " . . . . . 6 rigs
63, Northup & Co. . . . . rig
63, " No. 3 500
64, Herrington & Ramsey 200

Rigs 24
Drilling 23

Total 47

WIRT.

Lot 33, Miner, Wellman & Fuller . . . . drilling
41, Coast & Rice, fishing 600
41, D. D. Flannigan & Co. 700
45, Dougherty & Root 200
34, Dow Bros. & Percey, shut down . . sand
56, Rice Bros 100

Drilling 6

GENESEE.

Lot 4, Walsh & O'Day 600
7, Dean & Merriman. 250
7, McCalmont Oil Co., No. 5. . . . . sand
7, " " " . . . . . rig
8, I. Willets, No. 28 350
8, " " 29 . . . . . rig
8, McDougall Oil Co., No. 24 900
8, " " " 25 400
8, St. Joe Oil Co., No. 4 300
8, " " " 5 . . . . . rig bldg
8, " " " 6 . . . . . rig bldg
8, D. W. Canfield 1000
16, G. S. Bussell 1000
16, Pat. Nolan 200
16, Laney Bros. 300
16, Chas. C. Cooper . . . . . rig
16, Wells & Cassidy. 150
23, A. A. Richardson 150
23, Coss & Mandeville . . . . . 2 rigs
24, W. P. McCleary 900
24, " " . . . . . rig
24, Daggatt Oil Co.. No. 4 700
24, " " " 23 . . . . . sand
24, " " " 24 . . . . . rig
24, Hammond & Barton, No. 5 750
24, " " " 6 700
24, " " " 7 500
24, " " . . . . . rig
24, Book & Gartland, No. 4 400
24, " " 5 350
24, " " 6 . . . . . drilling
24, R. R. Armor, No. 3 250
24, " " 4 . . . . . drilling
24, Davis & Haldeman 300
24, " " 600
24, " " . . . . . rig bldg
24, W. Cranston 150
24, " . . . . . rig
30, Bennie, Gorton & Tyler 300
30, " " . . . . . rig
30, Randolph Bros 200

Rigs 12
Drilling 29

Total 41

CLARKSVILLE.

Lot 9, Henry Werthman . . . . . rig bldg
9, Brunnel Childs . . . . . rig
9, B. F. Brunnell . . . . . rig
25, Reid & Faunce . . . . . rig
34, Love Bros . . . . . rig bldg

Rigs 5

SCIO.

Lot 1, York & Wright 700
1, " " . . . . . rig
2, Jeff. Varney . . . . . rig
3, Morrison & Latimer 900
2, J. O. Johnson . . . . . rig bldg
2, Nameless Oil Co. 260
Friendship, Bradley, Howard & Co . . 100

Rigs. 3
Drilling 4

Total 7

CHERRY GROVE.

Lot 589, Wilcox Oil Co., No. 2 . . . . . sand
589, " " 3 . . . . . sand
589, " " 4 . . . . . sand
589, " " 5 400
589, " " 6 400
589, " " 7 . . . . rig bldg
590, Brown Bros., No. 2 600
590, Mahoopany Oil Co., No. 5 1200
590, " " 6 1000
590, " " 7 600
590, " . . . . . 2 rigs
610, Barnsdall Bros. . . . . drilling
611, Forest Oil Co., No. 11 . . . . . sand
611, " " 12 400
611, " " 13 1000
611, " " 14 . . . . . rig bldg
618, C. K. Book & Co., No. 5 200
618, Conrath & Co . . . . . sand
636, Rix, Pemberton & Co., div. 15 . . . 100
646, George Pease . . . . . sand
650, Becker & Co. 800
659, Pratt & Co. . . . . sand
671, R. E. Green, No. 17 1500
672, J. O. Johnson . . . . . sand
673, W. Murphy & Co. 1200
680, John McEowen, No. 2 . . . . . rig bldg
680, Thompson & Potter, No. 4 200
680, " " 5 . . . . . rig
680, W. C. Curtis 1300
680, Arters & Wetmore 150
681, George Given 400
681, Greenlee & Anderson, No. 2 . . . . sand
681, Mead & Green, No. 2 1200
681, Unknown . . . . . rig
697, Union Oil Co., No. 1 1000
697, " " 2 700
697, " " 3 500
722, Galey Bros 1500

Rigs 7
Drilling 31

Total 38

Warren, Forest and Sheffield.

CLARENDON.

Lot 498, F. Pratt & Co 100
528, Beaumont & Drake 200
161, Helm & Co 200
107, Malone & Smith 300
107, " . . . . . rig
498, Conaway & Gondy . . . . . rig
652, Brown Bros 100
Brennen, Porter & Co . . . . . rig bldg

FOREST AND SHEFFIELD.

Tract 2,735, Reno Oil Co 200
2,735, Patterson & Co . . . . . rig
Cooper Tract, Morck & Shultz 200
Fox Estate, " . . . . . sand
Tract 3,193, Murphy & Co 900
3,193, Grace & Co 300
3,142, Morck & Falconer . . . . . rig
4,821, Balltown Oil Co 1200
5,196, Mallory & Co 1200
5,214, McKeown, Berlin & Co 900
4,211, Tionesta Oil Co 1100
J. Cornwall, fishing 1800
Stewart, W. B. Ash & Co 1000
—— C. Vensel . . . . . rig bldg

Rigs 6
Drilling 16

Total 22

LOWER FIELD.

CRANBERRY.

Ray, Jerry Hefferman 100
Sayers, Kugler & Co., No. 5 600
" " " 6 . . . . . rig
" " " 7 . . . . . rig
" " " 8 . . . . . rig
" " " 9 . . . . . rig bldg
Brandon, " " 10 . . . . . rig
" " " 11 . . . . . rig
Flinchbaugh, Dale Bros 700
" Hulings & Co 500
" Dale Bros . . . . . rig bldg
Shaner, Duncan & Co . . . . . rig
Burford, Morrison . . . . . rig
Gormley, Hoover & Co . . . . . rig bldg
Pumbold, Dale & Smullin . . . . . rig
Brown, Russ Bros., shut down . . . . . sand

CLARION.

Richey Run, Porterfield & Co 800

BUTLER.

Renfrew, Forest Oil Co., and Jennings & Co . 1100
Dodds, " . 1050
Pillow, " . 500
Hussellton, " . 300
Weber, A. Sheidemantle 200
Hoffman, Baldridge O. Co 550
Weber, " 300
Hussellton, " . . . . . rig
Duffy, T. McConnell 1200
Wallace, E. I. Agnew 125
Bredin, " . . . . . rig bldg

Rigs 13
Drilling 24

Total 37

SUMMARY.

Wells Completed.

Section.	*Wells.*	*Pro- d'ct'n.*	*Aver- age.*	*Dry.*
East Branch, West Branch, Quintuple, Foster Brook, Kendall Creek, Oil Valley, Indian Creek, Big Shanty, Cole Creek and Bingham, Kinzua, all Dists	16	294	..	2
Totals	16	294	..	2
ALLEGANY FIELD.				
Alma	3	21	..	1
Bolivar	21	370	..	.
Wirt, Genesee, Clarksville, Scio	21	269	..	2
Totals	45	660	..	3
WARREN.				
Cherry Grove	39	475	..	11
Clarendon, Sheffield, Miscellaneous	5	85	..	20
Lower Country	7	135	..	2
Grand totals	116	1649	..	20

SUMMARY.

Drilling Wells.

Section.	*Drill.*	*Rigs.*	*Total.*
East Branch, West Branch, Quintuple, Kendall Creek	12	14	26
Foster Brook, Cole Creek, Oil Valley, Indian Creek	..	..	..
Four Mile, Kinzua, Dew Drop, Cole Creek	16	33	49
Big Shanty	..	..	..
Totals	28	47	75
ALLEGANY.			
Alma, Bolivar	31	31	62
Wirt, Genesee	35	12	47
Clarksville, Scio, Miscellaneous	8	4	12
Totals	70	47	117
WARREN.			
Cherry Grove	31	7	38
Clarendon, Miscellaneous, Sheffield, Forest	16	6	22
Lower Country	24	13	37
Bradford	30	45	75
Allegany	74	47	121
Grand totals	169	124	294

SHIPMENTS.

Shipment of Crude and Refined, in Barrels of 42 Gallons each, reduced to Crude Equivalent out of the Producing Regions in the years named:

YEAR.	January.	February.	March.	April.	May.	June.	July.	August.	September.	October.	November.	December.	Totals.
1859	. . . . .	. . . . .	. . . . .	. . . . .	. . . . .	. . . . .	. . . . .	. . . . .	. . . . .	. . . . .	500	1,200	1,700
1860	900	1,400	2,500	4,640	11,000	21,000	58,500	64,300	79,000	78,400	63,400	38,400	423,240
1861	54,800	49,640	68,410	95,300	184,000	189,000	200,400	210,000	263,000	184,000	76,321	75,282	1,650,133
1862	98,212	93,101	103,764	401,430	256,340	385,211	375,440	376,311	401,210	406,500	413,611	190,463	3,141,521
1863	171,132	104,928	148,388	488,994	456,411	428,282	413,413	281,400	398,211	264,441	481,340	706,211	3,747,951
1864	148,344	101,431	96,486	134,486	125,418	441,386	110,490	101,218	228,430	220,386	501,441	154,765	1,847,001
1865	121,386	94,803	103,401	144,444	140,301	338,403	184,231	115,821	231,402	228,321	315,262	704,779	6,100,137
1866	132,400	121,320	180,406	460,431	280,320	390,260	200,410	290,410	390,431	318,616	410,016	736,701	3,010,921
1867	123,460	115,321	165,430	450,830	300,410	360,311	210,410	260,310	384,206	300,102	480,013	137,807	7,883,710
1868	150,440	144,401	200,410	480,430	310,408	400,046	390,402	320,210	480,306	260,240	480,460	765,377	3,482,510
1869	200,026	160,340	240,410	460,406	340,318	400,601	310,260	250,214	450,200	480,860	480,410	749,896	3,653,551
1870	360,933	312,910	354,400	390,003	407,908	418,516	410,707	516,679	542,217	557,624	519,780	444,254	5,535,931
1871	437,691	347,718	383,890	389,147	587,375	501,754	541,137	528,134	551,075	505,071	480,977	410,822	5,664,791
1872	476,966	407,606	276,440	428,512	510,417	529,228	591,238	621,954	541,607	607,468	477,940	430,786	5,899,942
1873	573,124	527,440	668,374	708,191	768,176	696,414	814,449	864,768	952,955	9,010,852	959,589	955,443	9,499,775
1874	843,663	501,440	518,446	803,409	899,047	815,413	940,281	793,865	9,014,570	543,341	546,117	602,348	8,821,500
1875	435,095	327,776	693,918	729,581	681,679	745,986	904,537	882,089	9,109,392	871,917	671,066	871,902	8,924,938
1876	677,289	519,193	623,762	603,037	646,150	921,862	9,228,530	9,203,402	9,154,549	524,190	871,496	9,190,983	10,164,443
1877	743,461	484,904	913,919	903,526	9,234,324	9,391,124	9,096,951	0,425,943	9,563,797	9,268,971	9,205,634	600,019	12,832,578
1878	775,791	774,434	741,512	846,636	960,894	9,135,119	9,330,454	9,655,651	9,434,225	9,747,390	9,281,410	992,688	13,476,000
1879	663,998	702,749	973,879	1,136,188	9,331,469	9,369,314	9,625,035	9,808,238	9,647,120	9,664,469	9,453,645	9,542,585	15,896,469
1880	1,650,409	1,395,151	1,613,371	844,268	9,095,259	975,083	9,231,611	4,304,129	1,252,635	9,665,933	9,226,030	1,335,613	15,587,447
1881	1,061,617	915,048	1,476,740	1,348,398	9,563,436	1,729,697	9,925,532	9,214,877	5,031,950	2,080,467	2,069,641	7,014,655	20,232,038
1882	1,817,973	1,829,779	1,749,437	1,751,294	9,843,455	2,261,172	2,239,591	4,078,903	4,003,184	2,092,094	. . . . .	. . . . .	. . . . .
. . . . .	. . . . .	. . . . .	. . . . .	. . . . .	. . . . .	. . . . .	. . . . .	. . . . .	. . . . .	. . . . .	. . . . .	. . . . .	. . . . .

THE PRODUCERS' PETROLEUM EXCHANGE.

THIS new organization will shortly be in perfect working order. Its beginning, like many other necessities of the age, a surprise even to its original projectors. It is said that the Ruler of the Universe sometimes extracts good out of evil; but whether He should have the credit in this case, or Mr. John Haggerty, who became incensed at the treatment the public received at the hands of the old Oil Exchange management, in being shut out of the gallery, and shouted," Let us start a new Exchange, boys," is the problem at present. Haggerty happened to be heard by two other gentleman—S. S. Grandin and William Weible,—who were also somewhat agitated over the condition matters were assuming, and the trio started out to take preliminary steps. It is, perhaps, sufficient to state that within three days from that time 500 names of the best citizens of the town were secured as subscribers to the capital stock, which was placed at $50,000. All necessary arrangements have been perfected for obtaining a charter and proceeding to business, which will probably transpire about the 5th of December ensuing. So far it has been a most wonderful success, and it is hoped it may be made an Exchange, which for benefit to the trade of Bradford will be very great.

IT is well known that petroleum wells exist in large numbers in Alsace; but until recently it has been found unremunerative to work them. Borings have been proceeding between Hagenau and Weissenburg, with the result that a daily yield of 11,000 kilograms has been obtained. Other borings in the neighborhood of Weissenburg have revealed the presence of petroleum at a depth of 83 metres.

OCTOBER OFFICIAL QUOTATIONS FOR CRUDE.

THE following table shows opening, highest, lowest, and closing quotations at the Oil Exchange each day; also average for the month:

	Opening.	Highest.	Lowest.	Closing.	Avg.
1	. .	. .	. .	. .	
2	97½	98¾	96	96⅛	
3	95½	95½	91⅞	92½	
4	92	97¼	91½	96¾	
5	96⅞	96⅞	93⅛	93¾	
6	92	94¾	92	92⅞	
7	92⅛	93½	92⅛	92⅛	
8	. .	. .	. .	. .	
9	93	93	90	90	
10	89¾	95	87½	93⅛	
11	93	95	92½	94¼	
12	94	95¼	93¾	95⅛	
13	96	96⅝	95½	95¾	
14	95½	95½	92¼	93⅜	
15	. .	. .	. .	. .	
16	92¾	93⅞	91⅞	92⅛	
17	92	94	91¾	94	
18	93⅞	94⅛	91½	93¾	
19	94¼	94⅜	93¼	93⅝	
20	93¾	94	93⅜	93⅜	
21	93⅝	93⅞	93⅛	93¼	
22	. .	. .	. .	. .	
23	93⅜	93⅜	91⅞	92⅜	
24	Holiday.				
25	92	92⅛	91	91¾	
26	91½	92¾	91¼	92¾	
27	93	96	93	95⅝	
28	95¾	96⅜	95¼	95¾	
29	. .	. .	. .	. .	
30	95¾	96½	95½	95¾	
31	95⅝	96⅛	94¼	94⅞	

OCTOBER OFFICIAL QUOTATIONS FOR REFINED.

THIS table gives the daily quotations for refined oil at the principal foreign as well as domestic ports:

October.	N. Y. cts.	Philadelphia. cts.	Baltimore. cts.	London. pence.	Bremen. m'rk.	Antwerp. fr'c.
1	. .	. .	. .	. .	. .	. .
2	8¾	8⅛	8⅛	6¾	7.60	19
3	8¾	8⅛	8⅛	6¾	7.60	19
4	8⅜	8¼	8¼	6⅞	7.80	19½
5	8⅜	8¼	8¼	6⅞	7.80	19½
6	8⅜	8¼	8¼	6⅞	7.80	19½
7	8¾	8¼	8¼	6¾	7.85	19¾
8	. .	. .	. .	. .	. .	. .
9	8⅜	8¼	8¼	6⅞	7.80	19½
10	8⅜	8¼	8¼	6⅞	7.80	19½
11	8⅜	8¼	8¼	6⅞	7.80	19½
12	8⅛	8	8	6¾	7.70	19¼
13	8⅛	8	8	6¾	7.55	18¼
14	8⅛	8	8	6¾	7.55	19¼
15	. .	. .	. .	. .	. .	. .
16	8¼	8	8	6⅝	7.60	19¼
17	8	8	8	6⅝	7.55	19¼
18	8	7¾	7¾	6½	7.40	19
19	8	7¾	7¾	6½	7.40	19
20	8	7¾	7¾	6½	7.40	19
21	8	7¾	7¾	6⅝	7.50	19
22	. .	. .	. .	. .	. .	. .
23	8	7⅞	7⅞	6½	7.40	19
24	8	7⅞	7⅞	6½	7.40	19
25	8	7⅞	7⅞	6⅞	7.40	19
26	8	7⅞	7⅞	6⅞	7.40	19
27	7¾	7⅝	7⅝	6⅝	7.40	18¾
28	7¾	7⅝	7⅝	6⅝	7.50	18⅝
29	. .	. .	. .	. .	. .	. .
30	7¾	7⅝	7⅝	6⅝	7.25	18⅝
31	7¾	7⅝	7⅝	6⅝	7.25	18⅝

THE EXPORT TRADE.

WHILE for the past two months the quantity of petroleum exported does not equal that for the previous month of the year yet it has been sufficient to show a large increase over last year. The figures below are to the 15th instant. The total since January 1 were 548,755,901 gallons, against 531,737,975 gallons (crude equivalent) during a like period in 1881. This makes the increased exports in 1882 17,017,926 gallons in excess of those in the corresponding period of 1881.

THE ETHER SPRAY AN IMMEDIATE CURE FOR NEURALGIA.—Dr. McColganan extols the value of the ether or rhigolene spray for the instantaneous relief principally of facial neuralgia. He first had occasion to observe its good effects upon his own person, he having suffered greatly from facial neuralgia. Since curing himself, he has had occasion to test its efficacy in about twenty cases. The result was invariably a most gratifying success. In many instances a permanent cure was established. He attempts to explain its action by supposing a complete change to take place in the nutrition of the affected nerve in consequence of the intense cold acting as a revulsive.—*Southern Practitioner.*

CONGLOMERATE.

A DISTANT relative of ex-Governor Seymour has started a well near Belmont, N. Y. Belmont has had its oil craze before and Bel(mont) be able to find any grease.

PRODUCERS of oil are feeling some of the benefits of the great advance in prices. They subscribed $50,000.00 in one day and a half, for the establishing of a petroleum exchange of sufficient capacity to accommodate the trade in Bradford.

IN August last the value of the oil on the surface was about $16,000,000.00. To-day, August 15th, it is worth $40,000,000.00, an increase in this particular of $24,000,000.00. Oil property of every description may be calculated at about the same ratio.

Mr. E. H. BARNUM was the first man in the Bradford Exchange who paid $1.00 a barrel for oil, and there were one hundred men pointing their fingers at him in an instant. Mr. Barnum frightened himself; but it was only a few minutes till the whole mob were climbing over the bull ring shouting for oil at any price between a dollar and a dollar ten.